

PRODUCT DESCRIPTION

The CTech-LLC® Vacuum Carbon Wrap (VCW™) is a patented composite package system prefabricated in the workshop under strict technical standards. The composite fiber cloth is rolled and sealed in a specifically designed vacuum bag as a standardized product prefabricated in the workshop. The entire system consists of a vacuum composite kit, an adhesive kit, a filler kit and an accessory kit.

- Supplied as a standardized complete system.
- Complete 8-layer system. Customization is available.
- Standard fiber cloth width: 100mm, 300mm and 500mm. Customization is available.
- Exceptional mechanical property, tensile strength over 900Mpa

CTech-LLC® VCW™ patented technique ensures a stable fiber to adhesive weight ratio of around 60% to 40% in all conditions. This golden ratio grants CTech-LLC® VCW™ with exceptional mechanical properties that the tensile strength is as high as 900Mpa. CTech new technique improves the tensile strength by 50%.

FEATURES AND CHARACTERISTICS

- ✓ All pipe sizes
- ✓ Straight pipes, elbows, tees, valves, fittings, vessels
- ✓ Compatible with carbon steel, stainless steel, alloys
- ✓ Glass fiber, Carbon fiber and Aramid fiber
- ✓ No welding
- ✓ Supplied as a standard complete system
- ✓ Stronger mechanical property
- ✓ Stable installation performance

Save time, save money. It takes only 5-8 minutes to fully soak and prepare the fiber before the formal installation.

STORAGE

Vacuum carbon wrap should be stored at +10°C to +40°C and should not be exposed to direct sunlight. Keep the carbon fabrics in a dry place.

HOW TO USE

SURFACE PREPARATION

Substrate preparation can highly effect on the quality of the performance of CFRP systems.

- All the surfaces must be cleaned from dirt, grime, dust, curing compounds, oils, grease, waxes.
- An industrial vacuum cleaner must be used to remove dust and dirt.
- All the surfaces need grinding, sandblasting, shot blasting, pressure wash or other common mechanical methods to reach an even concrete substrate.
- The sharp edges must be smooth and rounded to a minimum radius of 30 mm.
- Note that concrete surfaces must be fully dried or cured so adhesive can properly dry.

TREATMENT

Vacuum carbon wrap can be cut with knives, commercial quality heavy-duty scissors, and rulers. These are proper tools for cutting CFRP systems to obtain an ideal length and width. Any of the other cutting instruments can damage the fabrics.

INSTALLATION

Installation of CTech-LLC® vacuum carbon wrap should be performed by licensed and specially trained groups of installers. The Installation must be compatible with existing relevant international codes.

INSTALLATION DIAGRAM

VACUUM CARBON WRAP PROPERTIES

Test Item	Value	Test Standard
width	100, 300 & 500 mm	-
Density	1.6-1.7 g/cm ³	ISO 1183-1
Service temperature	-50 – +80° C	-
Application temperature	10-40° C	-
Gelling time (23°C)	0.5-1.0h	-
Surface drying time (23°C)	2.0-4.0h	-
Barcol hardness (23°C)	>30 HBa	ASTM D 2583
Tensile strength	>1500 MPa	ISO 527-5
Elasticity module	>130 GPa	ISO 527-5
Inter-laminar shear strength	50 MPa	ISO 1922
Shear strength with steel	>18 MPa	ISO 4587
Bending strength	>1000 MPa	ISO 14125
Elongation at break	1.0%-1.5%	ISO 1421
Fiber content	>55%	ISO 11667



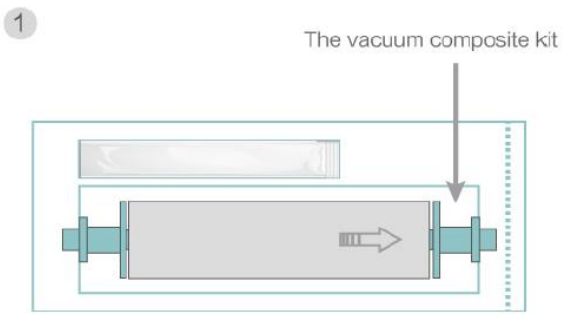


Figure 1. Take out the vacuum composite kit

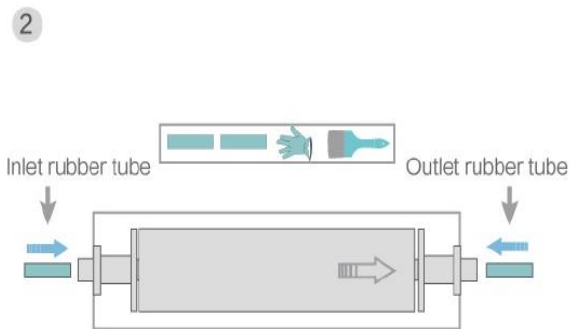


Figure 2. Connect the vacuum composite kit.



Figure 3. Take out the fully soaked fiber cloth. Mix the adhesive

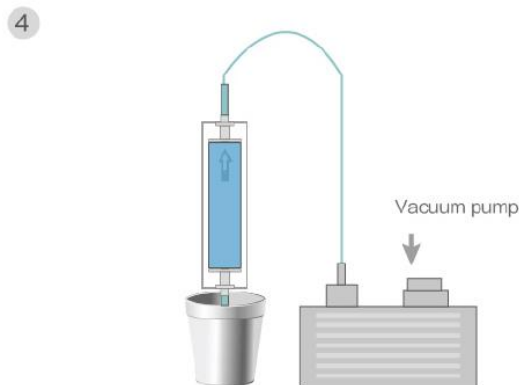


Figure 4. Suck up the adhesive and soak the fiber cloth.

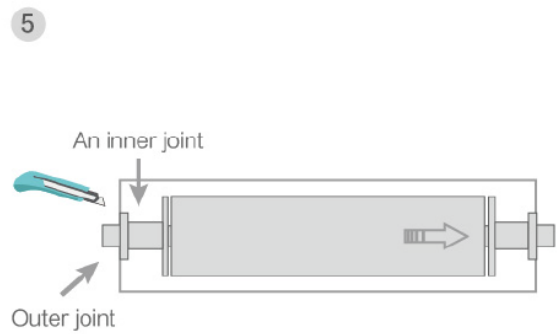


Figure 5. Take out the fully soaked fiber cloth

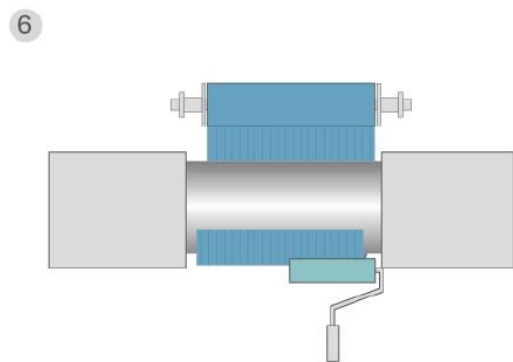


Figure 6. Wrap the defective pipe

LIMITATIONS

Proper temperature for applying epoxies is between 10° C to 40° C. for applying them must use adequate ventilation. They should not be used in cold and humid weather.

CAUTION!

All components of FRP systems may cause skin irritation and sensitization. Use of chemical resistant gloves is recommended. Avoid breathing vapors and dust. Get medical attention if you are breathing with difficulty. Resins products can cause strong eye irritation. Avoiding eye contact and Using safety goggles is necessary.

SAFETY PRECAUTIONS

- Avoid eye contact.
 - Do not allow resin contact with skin.
 - Use safety gloves and glasses.
 - Wear rubber boots and protective suits.
- Do not eat, drink or smoke when using the products.

FIRST AID

If eye contact happened, Flush eyes with large amounts of water and obtain medical attention. In case of skin contact, wash your skin with soap and water and get medical attention if irritation persists. If there is cough or difficulty in breathing, go to open air and get medical attention if it persists.

WARANTY

CTech-LLC® warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within one month of the date of purchase. CTech-LLC® shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory. The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before utilizing.