EstoWrap

High Strength Carbon Fiber Sheet For Structural Strengthening System At Concrete Structures

Description
EstoWrap is a high tensile strength, high elastic modulus sheet of longitudinal oriented continuous carbon fiber element which are held in position by lightweight, open mesh scrim. It comes in various sheet weight of carbon fibers (g/m^2). They are known as
- EstoWrap 150
- EstoWrap 200
- EstoWrap 230
- EstoWrap 300
- EstoWrap 450
- EstoWrap 530
- EstoWrap 600

When used in conjunction with a specially developed primer, improves structural performances by strengthening and improving shear strength and deformation properties.

Uses
EstoWrap is used for strengthening columns and beams of load bearing structures specifically where improvement to shear strength and deformation properties is required. Typical applications include piers, columns, connecting beams and slabs of railway and road bridges, buildings and towers.
In the following structures :
- Commercial, high rise
- Industrial plants
- Warehouse
- Bridges, tunnels, jetties
- Pipes, culvert, chimneys
- Power station plants

Advantages
- Exhibit high tensile strength and elastic modulus
- Good dimensional stability
- High impact resistant
- Resin is of high chemical resistant
- Imparts very low electrical conductivity
- Will not corrode
- Lightweight hence easy to handle and use
- Carbon reinforced hence good thermal expansion
- High shear stress and cut resistance

Durability Description
EstoWrap high performance fabric sheet which is encapsulated in EstoWrap resin to provide properties of high strength and high elastic modulus. Its low density properties, specific strength and modulus are extremely high compared with conventional materials such as steel and concrete.

EstoWrap is extremely easy to handle and apply with no noise and minimal site equipment necessary allowing quick and easy reinforcement of structural members without major disruption.
EstoWrap is lightweight, has high impact resistant, excellent tensile strength, is extremely stable at high and low temperatures and has excellent chemical resistance under a variety of exposure conditions.

Physical Properties

Product Name	Areal Weight (g/m^2)	Fabric Thickness (mm)
EstoWrap 150	150	0.086
EstoWrap 200	200	0.111
EstoWrap 230	230	0.131
EstoWrap 300	300	0.166
EstoWrap 450	450	0.255
EstoWrap 530	530	0.293
EstoWrap 600	600	0.337

Tensile Strength (N/mm^2)	> 3000
Fiber Strength (Mpa)	4900
Fiber Stiffness (Gpa)	230
Style	Woven UD

EstoWrap Adhesive Resin

Adhesive Strength (Mpa)		>1.5
Shear Strength (Mpa)		>30
Compressive Strength (Mpa)	>60	Flexural E-
Modulus (Mpa)	>3500	Flexural
Strength (Mpa)	>40	

Instruction to Use
Preparation
Concrete surface must be dry, smooth, sound free from debris and loose material. Surfaces must be fully cured and free from contamination.
Thorough preparation of the substrate is vital with light grit blasting recommended to remove all deleterious substances and provide a suitable key. All dust and debris must be removed prior to proceeding. Blow holes or imperfections should be filled with Estorex Putty or Estocrete WR prior to application of EstoWrap Primer.

Priming
The base and hardener components of EstoWrap Primer should be thoroughly stirred before the two are mixed together.
Pour the hardener into a suitably sized mixing vessel and add the base resin into the hardener. The use of a heavy-duty slow speed, flameproof or air driven drill fitted with a mixing paddle is desirable. Mix these components in the quantities supplied taking care to ensure all containers are scraped clean.
Apply EstoWrap Primer to the prepared substrate using a stiff brush, working the primer well into the substrate at a coverage rate of 0.3 kg/m^2.

Application
Arrange enough material, manpower and equipment to carry out the application within the resin pot life.
The base and hardener components of EstoWrap Encapsulation Resin should be mixed as per mixing instruction of EstoWrap Primer. Apply the EstoWrapRresin to the primed surface, using roller at the rate of 0.6 kg/m^2.
Immediately after application of the resin, the pre-cut EstoWrap Carbon Fabric Sheet (maximum 4m length) should be applied using rubber or plastic scraper.
Remove the release paper from the Estowrap Carbon Fabric Sheet and roll it with an impregnation roller in a direction parallel to the fibres in the carbon sheet.
After 30 minutes of the impregnation and within 3 hours, apply a second coat of EstoWrap Resin at a coverage rate

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of 0.6 kg/m^2 to completely encapsulate EstoWrap Carbon Fabric Sheet.
Following cure of the second application of EstoWrap Resin, apply Estotect PU finishing coat.

Limitation
EstoWrap should be protected via over coating with a PU based UV resistant coating within 6 hours of application.

Packing And Size

EstoWrap Encapsulation Resin
      Hardener 5 kg
      Base Resin   10 kg

EstoWrap Carbon Fiber Sheet
a) 150,200,230,300 0.5m(W)X100m(L)
b) 450,530,600   0.5m(W)X50m(L)

Coverage

EstoWrap Primer	0.3 kg/m^2
EstoWrap Encapsulation Resin	1.2 kg/m^2/2 coats

Technical support
Estop offers a technical support package to specifiers, end-users and contractors, as well as on site technical assistance.

Storage
EstoWrap Primer should be stored on pallets in dry conditions. Under these conditions the product will have a shelf life of 12 months.
If stored in extreme whether condition the shelf life may be reduced.
However, EstoWrap Carbon Fiber Sheet have an unlimited shelf life but must be stored in dry condition.

Additional information
Estop manufactures and offer a wide range of complementary products which includes waterstops, waterproofing products, grouts, anchors, specialized flooring products. In addition, a wide range of products formulated for repair and refurbishment of spalled concrete are available