

Product Description

La StrucWrap EP(CF) 450 Composite comprises of La StrucWrap EP epoxy and La StrucWrap CF 450 reinforcing fibre fabric. La StrucWrap EP(CF) 450 is a specifically engineered, unidirectional E- Carbon reinforcing fabric used in the conjunction with La StrucWrap structural composite system. The La StrucWrap CF 450 reinforcing fabric consist of Carbon continuous primary fibres oriented in the 0° direction (Fabric Length) with combination of Carbon and filler secondary fibers at 90° direction (Fabric Width) for added stiffening and stability. La StrucWrap EP is two component epoxy matrix material to be used as saturant cum primer for Carbon fibre wrapping.

Uses

La StrucWrap EP (CF) 450 is a Carbon fibre composite system for strengthening columns, beams and slabs of load bearing structures particularly where improvement to shear strength and deformation characteristics is required. It is ideal for seismic retrofitting also. Typical applications include piers, columns, beams, slabs, retaining walls, masonry bridges, pipes, chimneys, tunnels and other structures.

Features & Benefits

- **Very high strength to thickness or weight ratio** – Appreciable increase in strength and load carrying capacity without significant increase in dead load
- **Enhanced stiffness, shear & tensile capacities** – increased load carrying capacity and better resistance to seismic forces and deflection.
- **Chemical resistant** – excellent resistance to acids & alkalis
- **Flexible** – Can be applied on any shape or contour of substrate
- **Thin sections** – Can be effectively used in space constrained areas.
- **Economical** – Easy to install, time & labour saving

Advantages

- 100% Solvent free, pure component system
- Good high and low temperature properties
- Long working time
- High elongation
- Ambient cure

Technical Properties

La StrucWrap CF 450 Fibre

Fibre Density	1.8 gms/cm ³
Aerial Weight of fibre	450 gm/m ²
Nominal Composite Thickness per layer	0.4mm
Tensile Strength	>5000 N/mm ²
Modulus of Elasticity	240 GPa
Ultimate Elongation	2.1%

Gross Composite Properties

Ultimate Tensile Strength	1350 N/mm ²
Ultimate Tensile Modulus	99375 N/mm ²
Ultimate Elongation	1.0 %

La StrucWrap EP (Saturant Cum Primer)

Colour	Pale Yellow
Application Temperature	15°C-40°C
Mixed Density	1.10 ± 0.04
Pot Life	60 mins
Cure time	7 days at 30°C
Bond Strength	> 2.5 MPa

Application Instructions

Preparation

Concrete surfaces to be treated shall be free from oil residues, demoulding agents, curing compounds, grout holes and protrusions. Edges and sharp corners to be rounded off by diamond grinding and finishing with a thin repair mortar. At the time of application the surface shall not have any free moisture. The concrete surface to be wrapped shall be structurally repaired prior to treatment, for corrosion induced damage/ structural damage, by epoxy grouting and epoxy/ polymer modified La Greens repair systems. Any depressions in the concrete substrate shall be repaired with La StrucMix putty to even out undulations.

Mixing

Before mixing, the contents of each can i.e., base and hardener should be thoroughly stirred to disperse any settlement, which may have taken place during storage. The base and hardener are emptied into a suitable container and the material is thoroughly mixed for at least 3 minutes. Mechanical mixing using a heavy-duty slow speed (300 - 500 rpm), flame-proof drill, fitted with a mixing paddle is recommended.

Primer

The mixed material of La StrucWrap EP shall be used as primer and is applied over the prepared and cleaned surface. The application shall be carried out using a brush/roller and allowed to dry for about 24 hours before application of epoxy putty. The drying time of saturant is dependent on atmospheric temperature.

Putty

The primed surface shall be finished with La StrucMix Putty to cover the pinholes and undulations in the concrete thereby ensuring 100% contact of Carbon fibre wrap.

La StrucWrap EP (Saturant)

The mixed material of StrucWrap EP is applied over the repaired surface using a roller. The fibre clothe should be laid directly on the first coat whilst wet and should be pressed in and smoothened with a roller. Second coat should be applied no more than 24 hours on the installed fibre.

La StrucWrap CF 450

The La StrucWrap CF 450 shall be cut to required size and then pressed first by gloved hand on to the saturant applied area and then with a stiff spatula or a surface roller to remove air bubbles. One more coat of La StrucWrap EP (saturant) is applied over the Carbon fabric, The same procedure shall be followed for multiple layer fibre strengthening ensuring that each individual layer is firmly bedded and adhered to the preceding layer.

Top protective coat

If UV resistance is required then two additional coats of two component aliphatic based coating is recommended.

Curing

The coatings will become tack free in approximately 4 – 6 hours and be fully cured in 7 days.

Cleaning

Tools and equipment should be cleaned with xylene or, other solvent immediately after use. Hands and skin shall be washed with soap or an industrial hand cleaner.

Limitation

StrucWrap EP(CF) 450 is only recommended for use as described in the uses section of this datasheet. The performance of StrucWrap EP(CF) 450 is limited to the specifications and recommendations as described in this datasheet.

Coverage

La StrucWrap EP	Coverage
As a Primer	8-10m ² /kg
As a Saturant	1.3-1.5kg /m ² **
La StrucMix Putty (Epoxy Putty)	1.6kg/m ² @ 1mm Thickness

** The Consumption of epoxy matrix depends on the texture of concrete surface and thickness of fibre

Package

StrucWrap Carbon Fibre is supplied in rolls of 0.5 meter width by 50 meter length. i.e. 25m² per roll.

La StrucMix Putty	12.6kg Pack
La StrucWrap EP (Saturant cum Primer)	Base : 25kg & 30kg Hardener : 25kg & 30kg
Mixing Ratio	Base 100 : Hardener 50

Shelf Life

Epoxy matrix if stored in original unopened containers under above mentioned conditions, shall have a shelf life of 12 months. If stored at high temperature or highly humid conditions the shelf life may get reduced. Fabric has a shelf life of 10 years in proper storage condition

Health & Safety

Some people are sensitive to epoxy resin systems and may develop dermatitis on skin contact. Rubber gloves and/or barrier creams, protective clothing, goggles and respirator shall be worn while handling the materials. Sufficient mechanical and/or local exhaust ventilation shall be provided to maintain easy working conditions.

If contact with skin or eyes occurs, washing with plenty of water is suggested. Solvent should not be used. If irritation persists, immediate medical advice shall be sought. Smoking is prohibited during application/ handling of the product. Gloves & protective clothing shall be worn while handling & application of La StrucWrap CF 450 fabric.

Important: La Greens India Pvt. Ltd., products are guaranteed against defective materials and are sold subject to its standard terms and conditions of sale. It is the Customer's responsibility to satisfy themselves by checking with the Company whether the information is still current at the time of use. The customer must be satisfied that the product is suitable for the use intended. All products comply with the properties shown on current Technical Literatures. However, La Greens India does not warranty or guarantee the installation of the products as it does not have any control over installation or end use of the product. All information and particularly the recommendation relating to application and end use are given in good faith.



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