

# Talrakfibwrap GF

Advanced Polymer Composite system for structural applications



The Construction Alchemists

## Description

Talrakfibwrap GF is a glass fibre composite wrapping system where Talrakfibwrap GF is used in conjunction with an epoxy sealer cum primer, Talrakfibwrap Primer, and a high build epoxy saturant Talrakfibwrap SE. The system is protected by a polyurethane top coat of Talrakfibwrap PU in case of atmospherically exposed structures.

## Features & Benefits

- Very high Specific Strength ( strength to weight ratio) - Significant enhancement 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 and alkalis
- Flexible- Can be applied on any shape or contour of substrate
- Thin sections - Can be effectively used in space constrained areas.
- Creep & Fatigue resistance - Ideal for conditions of sustained loading and repeated loading.
- Economical- Easy to install, time & labour saving

## Primary Application

Talrakfibwrap GF is an advanced polymer composite system with E Glass Fiber recommended for enhancement of mechanical strength of rc and steel structural members such as columns, beams, slabs and load bearing masonry and RC walls. Talrakfibwrap GF is useful in enhancing the compression, flexural, shear strength and deformation characteristics. Seismic retrofitting of structures can be designed employing Talrakfibwrap GF system due to enhancing the structural ductility of the structures. Typical applications include piers, columns, beams, slabs, retaining walls, masonry bridges, pipes, chimneys, tunnels and other structures.

## Specification Clause

The external bonded fiber reinforcement shall be of E Glass type, Talrakfibwrap GF that shall be bonded using compatible bonding epoxy saturant Talrakfibwrap ERS on the prepared concrete surface and primed with Talrakeprime LV, as per manufacturers specification.

## Technical properties

### Talrakfibwrap Primer

Density	1.14 g/cc
Pot Life	25 min. @ 27°C
Full cure	7 days

### Talrakfibwrap GF -Type 1

Weight of fibre	920 g/m <sup>2</sup>
Density of fibre	2.6g/cc
Fibre thickness	0.35mm
Fibre orientation	Unidirectional
Nominal thickness per layer	1.0 mm ( a p p r o x i m a t e l y )
Tensile modulus	73,000 N/mm <sup>2</sup>
Tensile strength	2300 N/mm <sup>2</sup>

### Talrakfibwrap SE, Saturant

Colour	Pale yellow to amber
Application temperature	15°C - 40°C
Viscosity	Thixotropic
Density	1.25 - 1.26 g/cc
Pot Life	2 hours at 30°C
Cure time	5 days at 30°C

### Talrakfibwrap PU - UV Resistant top coat

Pot life at 30°C	min 1 hr
Recoat time at 30°C	2 - 4hrs
Initial time at 30°C	16 hrs
Final time at 30°C	5 days
Colour	Available in range of colours
Application thickness	90-100 microns DFT in 2 coats
Mixed density	1.30 g/cc
Mixed viscosity	2 - 4 poise

# Talrakfibwrap GF

Product	Color	Pot Life @ 30°C	WTF (microns)	DFT (microns)	Indicative Coverage per coat /ltr
Talrakfibwrap Primer	Clear	20 min.	100	100	8.0-10.0 m <sup>2</sup>
Talrakfibwrap ERS	Amber	120 min.	250	250	3.5-4.0 m <sup>2</sup>
Talrakfibwrap PU	Grey	60 min.	100	45	8.0-10.0 m <sup>2</sup>

## Surface preparation

Concrete surfaces to be treated shall be free from oil residues, demoulding agents, curing compounds, grout holes and protrusions. The concrete surface to be wrapped, if damaged, shall be repaired locally using Talrak epoxy putty of Rendercem® range of repair mortars to offer a strong and even surface.

## Priming

The mixed material of Talrakfibwrap Primer epoxy primer is applied over the prepared and cleaned surface. The application shall be carried out using a brush and allowed for drying for about 24 hours before application of saturant.

## Pre - Mixing

Before mixing, the contents of each can 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), drill, fitted with a mixing paddle is recommended. Premixing is applicable to Talrakfibwrap Primer and Saturant.

## Saturant

The mixed material of Talrakfibwrap SE saturant is applied over the tack free primer. The wet film thickness shall be maintained @ 250 microns

## Talrakfibwrap GF

The Talrakfibwrap GF 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 Talrakfibwrap ERS saturant is applied over the glass fabric - Talrakfibwrap GF at 250 microns WFT after a minimum time lapse of 30 minutes.

The same procedure shall be followed for multiple layer fibre application.

## Top protective coat

If UV resistance is required then two additional coats of two component aliphatic polyurethane coating Talrakfibwrap PU shall be applied as topcoat. The WFT shall be 100 microns per coat.

## Curing

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

## Cleaning

Tools and equipments should be cleaned with Talrasol GP, solvent immediately after use. Hands and skin shall be washed with soap, or an industrial hand cleaner.

## Limitations

Talrakfibwrap GF should be installed as recommended by the structural consultant or as per drawings. The direction of warp and weft should be as recommended in the installation methodology.

## Estimating Packaging

Talrakfibwrap GF is supplied in rolls of 1m width by 43.9m length. i.e., 43.9 m<sup>2</sup> per roll

Talrakfibwrap Primer, Primer - 3.5 ltr

Talrakfibwrap ERS, Saturant - 4 ltr

Talrakfibwrap PU, Topcoat - 4 ltr

Talrasol GP - 5 & 20 ltr

## Coverage

Please refer to the table given under 'Technical Properties' for individual product coverage. However, the practical coverage may vary depending on the surface conditions.

## Storage

All the above products has a shelf life of 12 months if kept in dry store in original, unopened containers. If stored at high temperature and/or high humidity conditions the shelf life may be reduced.

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## Precautions

### Health & Safety instructions

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 SHALL NOT BE USED. If irritation persists, seek immediate medical advice shall be sought. Smoking and naked flame should be avoided while using the materials.

### Flash Points

Talrakfibwrap Primer, - 25°C  
Talrakfibwrap SE, Saturant - 33°C  
Talrakfibwrap PU, Topcoat - 65°C  
Talrasol Solvent - 33°C

Separate data sheets are available on these range of products.

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**Talrak Construction Chemicals Pvt. Ltd.**

An ISO 9001:2015 Certified Company

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