



# ReCon Wrap CF

## Structural Strengthening Carbon Fibre System

### DESCRIPTION

**ReCon Wrap CF** is a high strength, high elastic modulus carbon fibre strengthening system. In conjunction with a specially developed primer and saturant it improves structural performance by strengthening and improving shear strength and deformation properties.

### USES

**ReCon Wrap CF** can be used for strengthening structural elements like columns, beams, slabs, walls, etc. in various structures like buildings, bridges, silos, towers, pipes, etc.

### ADVANTAGES

- Non-corrosive
- High strength and high modulus
- Easy handling and application
- Good dimensional stability
- High chemical resistance
- High shear stress and cut resistance
- Flexible
- Minimal thickness
- Light weight

### TYPICAL PROPERTIES at 25°C

#### ReCon Wrap CF

PROPERTY	GRADE		
	CF200	CF300HS	CF530 HS
Fiber Weight (g/m <sup>2</sup> )	200	300	530
Fiber Density (g/cm <sup>3</sup> )	1.80	1.80	1.80
Design Thickness (mm/ply)	0.11	0.168	0.292
Composite thickness(mm/ply)	0.45	0.60	1.00
Tensile Strength - ASTM D3039 (kg/cm of sheet width)	320	600	1000
Tensile Strength for design (kg/cm <sup>2</sup> )	27,300	35,500	35,000
Tensile Modulus (kg/cm of sheet width)	26,000	39,500	65,000
Tensile modulus for design (kg/cm <sup>2</sup> )	2.35x10 <sup>6</sup>	2.35x10 <sup>6</sup>	> 2.35x10 <sup>6</sup>
Ultimate Elongation (%)	1.2	1.5	1.5



## ReCon Wrap CF

### Recon Wrap Primer

PROPERTY	TEST METHOD	VALUE
Component	-	Two: Part A-Base Part B- Hardener
Form	-	Liquid
Colour	-	Clear
Pot Life	-	70 +/- 10 mins
Service Temperature	-	+5°C to + 65°C
Surface Drying Time	ASTM D2939	6 - 8 Hours

### ReCon Wrap Saturant

PROPERTY	TEST METHOD	VALUE
Component	-	Two : Part A - Base Part B - Hardener
Form	-	Liquid
Colour	-	Grey / Off White
Pot Life	-	45 - 60 Minutes
Service Temperature	-	+5°C to + 65°C
Bond Strength	ASTM D4541	> 2 N/mm <sup>2</sup>
Compressive Strength	BS 6319-2	70 N/mm <sup>2</sup> at 7 days

### SURFACE PREPARATION

All grease, oil, chemical contamination, dust, laitance and loose concrete must be removed by scabbling or light bush hammering to provide a sound substrate. Concrete must be at least 14 days old prior to treatment. Steel surfaces should be grit blasted to white metal. Surfaces which show any traces of oil must be degreased with a chemical degreaser prior to grit blasting. Surface should be totally dry. For concrete structures, any sharp edges of the section should be rounded off. Surface cracks, pinholes, potholes and localised undulations should be repaired with solvent free epoxy putty **ReCon FCE**.

### APPLICATION

**ReCon Wrap System** can be applied using two different techniques:

<b>Dry System</b>	Fabrics are placed directly on a layer of wet saturant applied on the surface.
<b>Wet System</b>	Fabrics are manually dipped into saturant immediately before placing on primed surface.

**ReCon Wrap Primer:** Individually stir each component, Base and Hardener of **ReCon Wrap Primer** to homogenous state prior to mixing. Add hardener to base and mix for 3 minutes with a slow speed drill machine with a paddle, until a uniform mix is achieved. Avoid aeration of the mixed material. Spread the material with a suitable squeegee or stiff nylon brush, roller working the **ReCon Wrap Primer** into the surface to ensure total absorption. Finish off using a medium to long nap roller. Spray application is also possible. Care must be taken to ensure the required application rates are achieved.



## ReCon Wrap CF

**ReCon Wrap Saturant:** Individually stir each component Base and hardener of **ReCon Wrap Saturant** to homogenous state prior to combining. Add hardener to base, mix for 3 minutes with a slow speed drill machine with a paddle, until a uniform mix is achieved avoiding aeration of the material.

Apply mixed **ReCon Wrap Saturant** to the primed surface using roller at a rate of 0.6 - 1 ltr/m<sup>2</sup>. Immediately after application of first coat, the pre-cut **ReCon Wrap CF** sheet should be applied using hard rubber or plastic roller / scrapper. Remove the release paper from the **ReCon Wrap CF** sheet and roll it with an impregnation roller in a direction parallel to the fibers of the carbon sheet. After 30 minutes of the impregnation and within 3 hours, apply a second coat of **ReCon Wrap Saturant** at coverage rate of 0.6 - 1 ltr/m<sup>2</sup> to completely encapsulate **ReCon Wrap CF** sheet. Silica sand can be sprinkled over last coat of saturant to facilitate bonding of subsequent cementitious renders.

**Additional Fabric Layers :** For additional layers of **ReCon Wrap CF**, apply **ReCon Wrap saturant** to previous applied layer wet on wet within 3hrs after application of the previous layer and repeat laminating procedure. If it is not possible to apply within 3hrs, a waiting time of at least 12hrs and maximum of 24 hrs must be observed before application of next layer. If more layers of fabric are applied after 24hrs, the last hardened coat must be sanded before further application.

**NOTE:** Over lap of at least 100 mm or as mentioned in design shall be maintained in the direction of fibre length. Though overlap is not required in weft direction (parallel to fibre direction), follow the instructions as per design directions. Overlap joints of parallel wraps should be on subsequent faces of column or distributed along the periphery of the circular column. Strengthened areas with **ReCon Wrap CF** which are exposed to sun rays or UV rays should be over coated with a UV resistant coating **ResiGard PU** or **MoyaShield ACC** within 10 hours of application.

PACK SIZE	<b>ReCon Wrap CF Sheet</b>	: 100 mtr roll ( 0.5m wide)
	<b>ReCon Wrap Primer</b>	: 6 and 15 ltr
	<b>ReCon Wrap Saturant</b>	: 3 and 6 ltr
COVERAGE / CONSUMPTION	<b>ReCon Wrap CF Sheet</b>	: 50 m <sup>2</sup> /roll
	<b>ReCon Wrap Primer</b>	: 5-6 m <sup>2</sup> /ltr
	<b>ReCon Wrap Saturant</b>	: 0.6-1 ltr/m <sup>2</sup>
GENERAL INFORMATION	<b>Shelf Life</b>	12 months from date of manufacture when stored under warehouse conditions in original unopened packing. Extreme temperature / humidity may reduce shelf life.
	<b>Cleaning</b>	Clean all equipments and tools with <b>Conmix Cleaner</b> immediately after use.



## ReCon Wrap CF

### HEALTH and SAFETY

#### PPE's

Gloves, goggles and suitable mask must be worn.

#### Precautions

Contact with skin, eyes, etc. must be avoided.

#### Hazard

Regarded as non-hazardous for transportation.

#### Disposal

Do not reuse containers. To be disposed off as per local rules and regulations.

#### Additional Information

Refer MSDS. (Available on request.)

### TECHNICAL SERVICES

**CONMIX Technical Services** are available on request for onsite support to assist in the correct use of its products.

#### Manufacturer:

#### **CONMIX LTD.**

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