

PROPAM® CARBOCOMP TEXTIL

Carbon fibre fabric for the reinforcement of structures.

PROPAM® CARBOCOMP TEXTIL is a system based on using unidirectional carbon fibre (CFRP) fabric with great tensile mechanical strength, for reinforcing concrete, steel, brick wall and wooden structures.

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FIELDS OF APPLICATION

Structural changes:

- Reinforcement of elements subject to compression due to confinement.
- Shearing reinforcements in beams.
- Traction reinforcements in elements subject to bending such as beams, joists and slabs.
- Removing supporting elements (walls, columns...).
- Opening of gaps in slabs for installations, stairs, etc.

Changes in use:

- Due to increases in service loads.
- Installing heavy machinery in buildings.
- Increase in traffic on bridges.

Structural deterioration or damage in service:

- Significant improvement in earthquake behaviour.
- Protecting structures against the effects of the impact.
- Ageing of the materials making up the structure.
- Reduction of the rebar sections due to corrosion.
- Reduction of arrows and deformations.
- Controlling, reducing and stitching structural cracks and fissures.
- It improves the behaviour of stone or brick wall structures.
- Impacts.

Execution or project errors:

- Insufficient rebar or poorly fixed.
- Drop in the envisaged concrete strength.
- Cutting resistant elements and rebars with a drill.

PROPERTIES

- Very high mechanical strength, ten times higher than steel.
- Very lightweight, unnoticeable weight in the structural calculation.
- Versatile: suitable for reinforcing compression, cutting or traction elements.
- Its minimum thickness and flexibility allows it to maintain the original shape and appearance of the structure.
- Adaptable to the reinforcement needs at each point using several layers.
- Very easy to transport and install.
- It does not show corrosion, and is maintenance-free.
- Excellent fatigue strength.
- Excellent durability and good chemical strength.

HOW TO USE

Preparing the substrate:

Good substrate preparation and analysis are essential for the system to work perfectly.

Concrete:

The surface to reinforce must have good levelling and no irregularities or honeycombs. If the structure shows signs of structural damage or corrosion, this must be treated beforehand using the **PROPAM®** systems for repairing the structures.

The surface to reinforce must be dry, clean, rough, firm and free of any pollutant, paint, surface slurry, etc.

At any event, it is always to be treated with sandblasting, a needle gun, sanding or manual milling, so as to remove any non-resistant elements that the concrete may have on its surface.

There are to be no irregularities on the surface where the sheet is to be stuck, measuring more than 0.5 mm.

If there are large significant defects or flaking, repair beforehand with **BETOPOX® 920 P**.

Wood:

The surface must be prepared by sanding and sand blasting and then suction cleaning. The surface must have the correct smoothness and surface evenness without any singular elements such as damaged knots, wood parasites, one-off gaps or damage, etc.

Steel:

The surface is to be prepared by sand blasting to a cleaning degree of Sa 2½, cleaning the surface with a dry and clean cloth, and fixing the sheet immediately.

Primer:

Generally, it is not necessary to prime the surfaces. Only in those that have great porosity, as light a layer as possible of **BETOPOX® 93** low viscosity epoxy resin it to be applied.

Adhesive:

The appropriate adhesive for fixing the **PROPAM® CARBOCOMP TEXTIL** fibre is the **BETOPOX® CARBO** epoxy structural adhesive, which must be applied following the instructions on its corresponding technical data sheet. Prepare the amount of resin that is going to be used in the next 30 minutes. Remember that high temperatures shorten the usage time.

Application:

Beforehand, with the help of some scissors, cut the fabric, without folding it, to the necessary length, on a clean table and remove the protective film.

Apply the mixture of the **BETOPOX® CARBO** resin to the substrate with the help of a roller or brush, in an approximate amount of 350 g/m².

Place **PROPAM® CARBOCOMP TEXTIL** in the appropriate direction pressing with the help of the rigid roller in the direction of the fibres to make the resin penetrate between the fibres and impregnate them, while removing any possible air bubbles that may have been trapped. It is important to pass the roller only in the direction of the fibres so as not to damage or misalign them.

If necessary, overlap the two sheets of fabric in the direction of the fibres, and this is to be at least 20 cm. This overlap is to be made always in the case of column confinement.

When two sheets of fabric are positioned, one next to the other, it is only necessary to overlap them to a minimum extent to ensure that no point or plane remains uncovered.

If fixing more than one layer of fabric, apply a new layer of resin to the previous layer and repeat the fixing process explained above.

As a final coating, apply a layer of resin, in an approximate amount of 250 g/m². On this layer it is possible to sprinkle clean silica sand as a gripping layer for subsequent protective coatings.

Protection:

It is advisable to protect the **PROPAM® CARBOCOMP TEXTIL** system against the direct action of UV rays. To do this, the **BETOPOL** aliphatic polyurethane based outdoor coating can be applied. It is also advisable to cover it with mortar or plastering so as to protect it from impacts and vandalism.

Tool cleaning:

Tools and any stains can be removed before hardening with universal solvent. Once hardened, it can only be removed mechanically.

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PACKAGING

150 m and 300 mm wide rolls, in two different grammages

PROPAM® CARBOCOMP TEXTIL 225 (225 g/m²)

PROPAM® CARBOCOMP TEXTIL 300 (300 g/m²)

STORAGE

Unlimited time in a covered place, out of direct sunlight.

INDICATIONS TO TAKE INTO CONSIDERATION

- A technician with training in calculating structures must be responsible for designing the reinforcement.
- As it is a structural reinforcement, special care is to be taken over application, and it must be done by companies that are specialised and accredited by the manufacturer.
- The substrate temperature must be at least +5 °C and at most +35 °C.
- The smoothness and levelling of the substrate must be checked with a ruler, with a maximum tolerance of 10 mm on a 2 m ruler being allowed, and 4 mm on a 0.30 m ruler.
- The concrete must have a minimum age of 28 days and a compression strength >15 N/mm².
- When the system has hardened, it must be checked that there are no gaps, by tapping the surface gently. If there are any, they are to be filled with **BETOPOX® INYECCIÓN** low viscosity epoxy resin.
- The sizing of the reinforcement is to follow the standards in bulletin 14 of the FIB "Externally bonded FRP reinforcement for RC structures".
- For further information, consult our Technical department.

TECHNICAL DATA

Type	PROPAM CARBOCOMP® TEXTIL 225	PROPAM CARBOCOMP® TEXTIL 300
COMPOSITION	Intertwined unidirectional carbon fibres by a thread of fibreglass	
Colour	Black	
Roll width	300 mm	
Roll length	150 m	
Weight	225 g/m²	300 g/m²
Effective thickness	0.125 mm	0.167 mm
Tensile strength	4,000 MPa	
Dynamic elasticity module	240,000 MPa	
Elongation at break	1.6 %	
Density	1.8 g/cm³	
Water absorption (acc. to weight)	< 0.1 %	

TECHNICAL APPROVAL DOCUMENT



DIT N° 603R/19

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Reinforced concrete building structure reinforcement systems

HEALTH AND SAFETY

All the information about conditions of usage, use, storage, transport and removing chemical waste is available on the product Safety Data Sheet.
The product and its packaging must be disposed of according to current legislation and it is the responsibility of the product end user.

LEGAL NOTICE

The data contained in this document are based on our experience and technical knowledge, gained during laboratory assays, and our bibliography. We will not be responsible for any other product applications not indicated in this file. The dosage and consumption data are only guidelines, based on our experience, and may alter due to atmospheric or on-site conditions. For correct dosage and usage amounts, it is necessary to conduct a trial or assay "in situ", for which the client is responsible. If you have any doubts or require additional information, please contact our Technical department. June 2020.



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