

## PC<sup>®</sup> CARBOCOMP PLUS

### *Multidirectional carbon fibre laminates that can be anchored with bolts*

#### 1. Application

Reinforcing of beams, floors, walls and columns in concrete, wood and steel. Strengthening of bridges and buildings, for example in the following cases:

- Repair of the original bearing capacity, like after a fire or corrosion of the rebars.
- Local strengthening of construction elements, when making holes through floor plates or walls.
- To increase the load bearing capacity.
- To repair errors during construction.

#### 2. Description

Epoxy carbon fibre laminate composed of unidirectional carbon fibres and carbon fibres at +/- 45° direction.

- Width: 60, 100, 120, 150 mm  
(other widths on request)
- Effective thickness: 1,0 mm  
(other thicknesses on request)
- Total thickness bonding structure included): 1,4 mm  
(other thicknesses on request)

#### 3. Properties

- Tensile strength: >2850 MPa
- Modulus of elasticity: >175 GPa
- Maximum elongation: 1,65%
- Density: 1,6 g/cm<sup>3</sup>
- Water absorption: < 0,1 percent by weight
- Application temperature: -40°C to + 130°C



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## 4. Processing

- Remove the peel ply.
- Concrete, steel, wood: the surface must be cleaned, prepared and smoothed.
  - Concrete: the surface has to be free of grease, cement and dust. Repair unevenness and weak zones (the adhesion strength should, if possible, be superior to 1,5 N/mm<sup>2</sup>). Smoothen the surface, remove all dust and make dry.
  - Metal: degrease and remove all rust, high pressure cleaning is preferred.
- Apply the epoxy glue PC<sup>®</sup> 5800/BL on the surface of the laminate that has to be glued:
  - Mix the components of PC<sup>®</sup> 5800/BL, apply on the laminate with a spatula and make sure that no air is being enclosed.
  - Consumption: ± 3 à 5 kg/m<sup>2</sup> depending on the roughness of the surface.
  - Pot life: ca 30 min at 20°C
  - After positioning the laminate on the surface, it must be pressed until a minimal quantity of glue comes out underneath the laminate.
- Remove the glue that is pressed out with PC<sup>®</sup> 5900.
- Drill holes in the laminate and anchor with stainless steel bolts.
- Avoid contact of the carbon fibre laminate with metal by applying a plastic, glass or polyester membrane in between.

## 5. Advantages

### 5. 1 Global advantages

- High tensile strength and stiffness
- Light weight
- Very low creep
- Flexible in use
- Great lengths can be jointless installed
- Excellent corrosion, acid and alkali resistance
- High durability
- Little thermal expansion
- Requires little or no maintenance
- The finishing with paint or plaster demands no special requirements.
- The laminate is protected by a peel ply that must be removed before application. Thanks to this no roughening, cleaning and degreasing is necessary.

### 5. 2 Advantages of bolting

- Prevents premature debonding phenomena ⇒ higher security of the structure!
- Achievement of higher strengthening factors.
- Shortening of the anchorage length.
- Application on poor quality concrete possible (tensile strength < 1,5MPa).
- Increase of the ductility of the reinforced element ⇒ early warning in case of failure of the structure.
- Resistance against vibration and impact.



### 6. Packaging

Length: to be agreed

### 7. Storage time

unlimited

### 8. Precautions and safety measures

- PC<sup>®</sup> CarboComp laminates:  
The laminate can have sharp edges, therefore wear safety gloves.
- Keep away from electricity.
- Epoxy glue: see the data sheet of PC<sup>®</sup> 5800/BL.
- Cleaner: see the data sheet of PC<sup>®</sup> 5900.