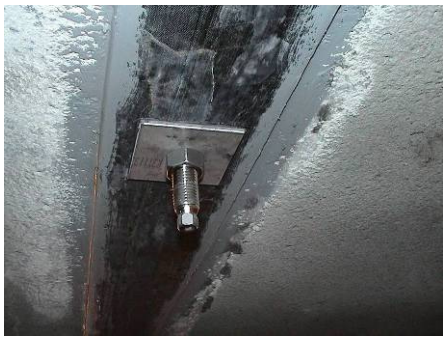
PC® CARBOCOMP PLUS

Multidirectional carbon fibre laminates that can be anchored with bolts

TECHNICAL DATASHEET

1. Description



Epoxy carbon fibre laminate composed of unidirectional carbon fibres and carbon fibres at +/- 45° direction, which can be anchored with bolts.

- Available widths: 50, 60, 80, 100, 120 mm
- Fibre content: 65 volume %
- Effective thickness: 1,2 mm

2. Application

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

- Repair of the original bearing capacity, for example after fire or corrosion of the rebars.
- Local strengthening of construction elements, when making openings in floor plates or walls.
- To increase the load bearing capacity.
- To repair construction errors.

3. Properties

Tensile strength average value min. value	 2400MPa >2200MPa
Modulus of elasticity average. value min. value	 165GPa >160GPa
Elongation min. value	 >1,33%
Density	1,6 g/cm³

4. Advantages

4.1 Global Advantages

- High tensile strength and stiffness
- Low self-weight

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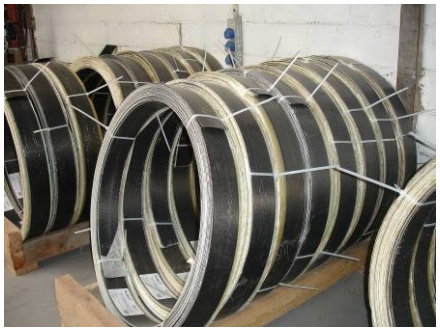

- Very low creep
- Flexible in use
- Large lengths can be installed jointless
- Excellent corrosion, acid and alkali resistance
- High durability
- Small thermal expansion
- Requires little to no maintenance
- The finish with paint or plaster demands no special requirements
- The laminate is protected by a peel ply that has to be removed prior to application. Thanks to this no roughening, cleaning or degreasing is necessary.

4.2 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.

5. Processing

- Concrete, steel, wood: the surface must be cleaned, prepared and smoothened.
  - Concrete: the surface has to be free of grease, cement and dust. Repair unevenness and weak zones. Smoothen the surface, remove all dust and dry. (<3%)
  - Metal: degrease and remove all rust, high pressure cleaning is preferred.
- Remove the peel ply in the longitudinal direction towards the end of the laminate and at an <45° angle.
- Apply the epoxy glue PC® 5800/BL on the surface of the laminate that has to be glued:
  - Mix the components of PC® 5800/BL, apply on the laminate with a spatula and make sure that no air is being entrapped.
  - Consumption: ± 3 to 5 kg/m² 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 excess glue with PC® 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.

6. Packaging

Length: 100 m
Storage time: Unlimited

7. Precautions and safety measures

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