

## TecnoFib AC170

### REINFORCEMENT SYSTEM WITH HYBRID ARAMIDIC-CARBON FABRICS

**Description** Fabric composed out of macro fibres in carbon and aramid, unidirectional, with hot welded warp.

**Advantages and characteristics** The mechanical performance of the reinforcement system Tecnofib AC170 shows a typical linear elastic behaviour till break, for practically static loads. For dynamic loads or stresses, the system behaves visco-elastic thanks to high energy dissipation properties of the aramidic fibres. The tolerated static load applied, shall be 1/3 of the tensile strength of the fibre.

**Fields of use**

- Bridges
- Railroad structures
- Walls
- Monocoque structures
- Structures, in general, with high seismic risk.

**Method of use** The product is applied to the surface of the structural elements to be reinforced, by mean of epoxy adhesives (TECNOEPO 701 UNIC).  
The installation of the fibre tissue with the adhesive can be made only after a thorough preparation of the substrate, using sand or grid-blasting, in order to remove all dust and incoherent parts. When the substrate is deteriorated or, in order to improve adhesion properties of the system, it is advisable to apply epoxy putty (TECNOEPO R) to level and repair the surface. The installation of the fabric has to start by the application by roller or brush of an epoxy primer, about 0,800 kg/m<sup>2</sup>, on the internal contact substrate of the fibre. Position the fibres, and roll with a special roller to release air and to allow the penetration of the resin into the fibre tissue. For consecutive layers, follow the same procedure, starting with the epoxy adhesive application. The curing depends on the reticulation time of the epoxy resin and it is linked to the climatic conditions like temperature and humidity. In particular, applications at temperature lower than +10°C, and at high relative humidity should be avoided. In case of application at temperatures below +10°C, and in order to have a pot life of the epoxy adhesive not too much delayed, it is advisable to heat slightly the environment.

**Remarks** The positioning of the fibre must follow the directions of the design therefore inter-crossed positioning of the tissue, will contribute to a particular anisotropic behaviour in the reinforcement.

**Packaging** Rolls of 100 linear meters, width 20 or 50 cm

**Technical Characteristics (typical values)**

- Principal mechanical characteristic: viscous-elastic
- Tensile strength: carbon wire 4800 MPa – aramidic wire 2951 MPa
- Traction elasticity modulus: carbon wire 240 GPa - aramidic wire 100 GPa
- Elongation: carbon wire 2,1% - aramidic wire 2,9%
- Density: carbon wire 1,82 g/cm<sup>3</sup> - aramidic wire 1,44 g/cm<sup>3</sup>
- Weight : 300 g/m<sup>2</sup>
- Fabric thickness: 0,204 mm

**Safety indications** Read carefully the indications on the packaging, or consult the specific Material Safety Datasheet.

The above information is based on our best experiences and lab results and on results of the application of the product in various fields. Tecnochem Italiana is not responsible for negative performances due to not proper use of the product or for defects due to elements not connected with the quality of the product included wrong storage. Technical characteristic in this technical data sheet are up-to-dated periodically. Revision date of this technical data sheet is indicated below. Changes of this data sheet can be found in our web-site [www.tecnochem.it](http://www.tecnochem.it) where you can find the same technical data sheet updated in real time.

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