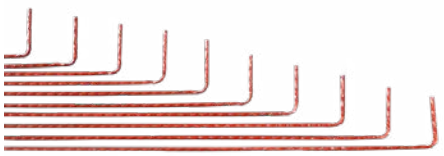
TCS GLASS CONNECTOR

TCS GLASS CONNECTOR is an alkali-resistant GFRP (Glass Fibre Reinforced Polymer) composite 'L' connector made from epoxy resin. The FRP connector guarantees excellent positional stability and workability on site. The connector is applied with organic matrix V-FIX ancorante vinilestere for the FORTIUS reinforcement system (CRM). The FORTIUS reinforcement system is certified with ETA - 21/0524 according to EAD 340392-00-0104.



- Restoration
- Resistant
- Versatile
- Highly Adhesive
- Quick
- Light
- Reversible
- Easy
- Pollution Resistant

Features

The TCS GLASS CONNECTOR is ideal for the consolidation and reinforcement of structural elements made of masonry, stone, tuff and reinforced concrete for static or seismic improvement and retrofitting. Concrete and reinforced screeds.
Versatile: can be applied with different inorganic matrices of NHL 5 natural hydraulic lime or traditional.
Restoration: in combination with an inorganic matrix of natural hydraulic lime B-STRUCTURA makes it a reinforcement and consolidation system for structures subject to Superintendence constraints where it is essential to use materials compatible with those of the period capable of reinforcing without altering the system's breathability and thermo-hygronometric balance.
Reversibility: systems that are easy to remove and thus restore the pre-consolidation conditions of existing structures.
Resistant: high technical performance of resistance and containment of loads.
Easy: extremely simple installation following a few simple steps.
Durability: high resistance to humid, alkaline and aggressive environments thanks to the use of epoxy matrix.

Fields of Application

Specifically for the consolidation and reinforcement in bending, compression and shear in-plane and out-of-plane of structural elements. Hooping and banding. In-plane reinforcement and innovative reinforced kerbs. Particular use for the extra-/intra-dovetal reinforcement of masonry and/or stone vaults and arches. Collaborating screeds and castings Brick, stone, mixed stone masonry, tuff and reinforced concrete elements. Evaluation of the most suitable matrix depending on the type of substrate. Normally used with mortars from the B-STRUCTURA and MATERICA ranges.

Application

Before proceeding with the application of the reinforcement system, the substrate must be cleaned and properly prepared.

INSTALLATION INSTRUCTIONS ON MASONRY
Rough surfaces (solid bricks, rough-hewn masonry, cobblestone, mixed masonry, stone and tuff):
1. Dry positioning of TCS GLASS MR44, MR48, MR88, MR812 or MR1212 mesh. Connectors or temporary devices may be used to simply hold the mesh in place;
2. Dry positioning of the TCS GLASS CORNER MR48/MR88 or double MR88 corner elements with suitable overlapping (total overlapping of the "L" element is recommended and in any case not less than 15 cm);
3. Creation of the 12 mm diameter holes for the installation of the connectors;
4. Cleaning of the holes;
5. Saturation of the drill hole with V-FIX chemical anchor or inorganic matrix;
6. Insertion of the TCS GLASS CONNECTOR with a special 45°-mounted mesh or FAZZOLETTO MR44 PA;
7. Application of the inorganic matrix to completely cover the mesh, gauze and connectors. B-STRUCTURA line for application with lime or MATERICA line for application with concrete repair mortars.

INSTALLATION INSTRUCTIONS ON CONCRETE
Smooth surfaces (concrete, brickwork or very flat structural elements):
1. Application of a first coat of inorganic matrix rendering. B-STRUCTURA line for application with lime or MATERICA line for application with concrete repair mortars;
2. Positioning of TCS GLASS MR44, MR48, MR88, MR812 or MR1212 mesh. Connectors or temporary devices may be used to simply hold the mesh in place;
3. Positioning of the TCS GLASS CORNER MR48/MR88 or double MR88 corner elements with suitable overlapping (total overlapping of the "L" element is recommended and in any case not less than 15 cm);
4. Creation of the 12 mm diameter holes for the installation of the connectors;
5. Cleaning of the holes;
6. Saturation of the drill hole with V-FIX chemical anchor or inorganic matrix;
7. Insertion of the TCS GLASS CONNECTOR with a special 45°-mounted mesh or FAZZOLETTO MR44 PA;
8. Application of the second coat of inorganic matrix to completely cover the mesh, gauze and connectors.

B-STRUCTURA line for application with lime or MATERICA line for application with concrete repair mortars. The FORTIUS reinforcement system consists of five types of mesh called TCS GLASS MR44, MR48, MR88, MR812 and MR1212, two types of TCS GLASS CORNER MR48 and MR88 and the TCS GLASS CONNECTOR.
The minimum recommended number of connections for the FORTIUS system using the CRM technique is 4 pcs/m². Creation of the 12 mm diameter perforation in the case of a non-pass-through connection. In the case of a through connection, a second "L" connector of a size adapted to the project specifications must be overlapped for 10/15cm (in the overlap area, 24mm non-axis perforation). Cleaning the perforation. Saturation of the perforation with V-FIX resina vinilestere two-component epoxy resin anchor certified for structural bonding.

Items of Specification

TCS GLASS CONNECTOR
GFRP (Glass Fiber Reinforced Polymer) AR connector type TCS GLASS CONNECTOR for structural reinforcement of masonry in brick, stone, tuff, limestone, floors, ceilings, vaults and concrete elements. The connector is L-shaped preformed, manufactured using Pullweaving technology, consisting of glass fibre and thermosetting epoxy resin, average tensile modulus > 44 GPa, characteristic tensile strength > 28 kN, characteristic elongation at break 1.11%. Residual tensile strength > 80% and elastic modulus > 100% for wet, alkaline and saline environment after conditioning tests at 3000 hours.

Warnings

- Product for professional use.
- Do not modify the product.
- Store the product in a dry place, in the original unopened packaging.
- Consult safety data sheet before using the product.
- The data given correspond to the technical and applicative knowledge in our possession for an appropriate use of the product. We therefore recommend carrying out a prior practical test in order to check the suitability of the product for its intended use and consumption.
- Protect surfaces from atmospheric phenomena, sun, wind, rain and frost.
- Since our company is not the executor of the works and cannot directly intervene on site conditions and the methods of execution of the works, the indications given are to be considered indicative and general, and therefore not binding for the same.
- The company reserves the right to make any changes it deems necessary at any time and without prior notice.
- For further information and practical product demonstrations, please consult our technical service.
- Always refer to the latest versions of the technical data sheets available at www.tcs-srl.it.

Technical Data

PRODUCT TYPE: Glass fibre L-connector with epoxy matrix for CRM systems. FORTIUS system component.

QUALIFY ETA - 21/0524 in accordance with EAD 340392-00-0104

NOMINAL DIAMETER 8,2 mm

NOMINAL SECTION (graduated cylinder) 52,28 mm^2

GRAMMAGE 103 g/m

NOMINAL AREA REFERRED TO THE FIBRE 29,50 mm^2

LIMIT TEMPERATURE OF USE da -15°C a 70°C

FIBRE CONTENT 74% (by weight), 53% (by volume)

FIBRE DENSITY 2,50÷2,60 g/cm^3

MATRIX DENSITY 1,15÷1,25 g/cm^3

GLASS TRANSITION TEMPERATURE OF THE COMPOSITE 70°C

REACTION TO FIRE CLASS F

SINGLE BAR TENSILE STRENGTH (AVERAGE) 30 kN

SINGLE BAR TENSILE STRENGTH (CHARACTERISTIC) 28 kN

SINGLE BAR PULL (MEDIUM) 579,44 MPa

SINGLE BAR PULL (CHARACTERISTIC) 540,43 MPa

TENSILE STRESS REFERRED TO THE FIBRE (AVERAGE) 1016 MPa

TENSILE STRESS REFERRED TO THE FIBRE (CHARACTERISTIC) 949 MPa

ELASTIC MODULUS (CHARACTERISTIC) 38 GPa

DEFORMATION AT BREAK (CHARACTERISTIC) 1,11%

LENGHT Short side 10 cm - Long side 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 cm

PACKAGING 100 pcs/box

STORAGE In the original packaging in a dry place