

C-BAR

Enhanced adhesion pultruded rod in CFRP (Carbon Fibre Reinforced Polymers)



FIELDS OF APPLICATION

- Implementing transversal connections for structural strengthening work on existing masonry and improving anchoring.
- Anchoring solutions within existing masonry and concrete structures.
- Cracks stitching.
- Volumetric repairs on sections of structural and non-structural concrete elements (e.g. balcony front edge, parapets, edge beams).
- Additional reinforcement within concrete casts.

METHOD OF USE

Application on masonry for connection or anchoring

- Drill a series of approx. 18-20 mm diameter holes in the substrate, using the appropriate drilling speed for the type of material.
- The depth, inclination, position and pitch of the connection systems must conform to the design requirements, and be approved by the Works Manager.
- Eliminate any dust and loose parts created by the drilling process from the holes using a compressed air jet.
- Wet the hole, ensuring no water remains inside it.
- Cut the **C-BAR** to the desired length using an angle grinder.
- Fill the hole with **MX-JOINT** inorganic matrix (consult the technical data sheet, available on the web site www.ruregold.it for instructions on preparing the matrix). Inject the product using the Ruregold **APPLICATOR GUN**, complete with rigid nozzle extension and flexible coupling.

- Anchor the rod by inserting in the hole and rotating it.
- Eliminate any excess mortar that is forced out of the hole.
- As an alternative to the inorganic matrix, an organic matrix, such as **CentroStorico Chemical Anchor** may be used (consult the technical data sheet, available on the web site Ruregold.com). The diameter of the holes should be approx. 12-14 mm.

Applying the system on existing concrete

- Eliminate any deteriorated concrete and any loose or partially detached parts of the existing substrate.
- Clean the substrate thoroughly, eliminating any remaining traces of dust, rust, oil and grease.
- Apply the passivating layer to the existing concrete rebars, if necessary, using a paintbrush to apply two coats of an anti-corrosive, cementitious mortar, e.g. **Ruregold Passivator** (consult the technical data sheet, available on the web site Ruregold.com) so that the exposed reinforcements are completely covered, subject to prior approval by the Works Manager.
- Cut the **C-BAR** to the desired length using an angle grinder.
- Position the pultruded rod as indicated in the project.
- Restore the demolished portion of the concrete cover using a repair mortar, e.g. **MX-R4 Repair** (consult the technical data sheet, available on the web site Ruregold.com), or a new concrete cast.

PROPERTIES OF THE MATERIALS

Type of fibre	Carbon
Fibres density	approx. 1.80 g/cm ³
Tensile strength of the fibres	≥ 4000 MPa
Fibres strain	≥ 1.6 %
Fibres modulus of elasticity	≥ 230 GPa
Type of resin	Vinyl ester
Pultrusion resin density	approx. 1.0 g/cm ³
Tensile strength of the pultrusion resin	≥ 75 MPa
Pultrusion resin strain	≥ 4.30 %
Type of sand	Natural quartz
Sand density	approx. 2.65 g/cm ³

PROPERTIES OF THE C-BAR PULTRUDED ROD

Nominal diameter	10 mm
Weight	130 g/m
Length	3 m
Rupture load	192 kN
Ultimate tensile strength	2450 MPa
Tensile modulus of elasticity	130 GPa
Fracture strain	1.30 %
Storage	In the original packaging, indoors, in a cool, dry, unventilated place away from sources of heat.

PROPERTIES OF THE MX-JOINT INORGANIC MATRIX

Density of fresh mortar (EN 1015-6)	approx. 2000 kg/m ³
Application time at 20°C	Densification begins after approx. 10-15 minutes. Mix again and use within a maximum of about 45 minutes
Application temperature	From +5°C up to +35°C
Compressive strength after 28 days	≥ 25 MPa
Coverage	approx. 0.8 - 1 kg/m
Packaging	Disposable wooden pallet laden with 72 x 5 kg buckets - total weight 360 kg Disposable wooden pallet laden with 60 x 25 kg bags - total weight 1500 kg
Storage conditions (Italian Ministerial Decree 10/05/2004)	In original packaging, indoors, in a cool, dry, unventilated place.
Durability (Italian Ministerial Decree 10/05/2004)	Not more than 12 months from packing date.
Compliant	EN 998-2

SPECIFICATION ITEM

Supply and implementation of enhanced adhesion pultruded rod in CFRP, e.g. Ruregold **C-BAR**, having a nominal diameter of 10 mm, rupture load of 192 kN, ultimate tensile strength of 2450 MPa and modulus of elasticity of 130 GPa, together with **MX-JOINT** inorganic matrix. Pultruded rods are used for realising transversal connections and improving anchoring when carrying out work on existing masonry structures, creating anchoring systems within existing masonry and concrete structures, cracks stitching, volumetric repairs on sections of structural and non-structural concrete elements (e.g. balcony front edge, parapets, edge beams), and additional reinforcement within concrete casts. The substrate must be prepared and the system applied in accordance with the manufacturer's instructions.

Edition 04/2025_Revision 02

This technical data sheet is not a specification. The provided figures, and content thereof, are based on our best knowledge and experience, and are purely indicative in nature. The user is responsible for determining whether or not the product is suitable for the intended use, assuming all responsibility for its use and application. Laterlite reserves the right to change the packaging and the contained quantity without prior notice. Check that the revision of the TDS is the one currently in force. Laterlite products are intended for professional use only.

This Technical Data Sheet cancels and replaces previous editions, which are no longer in force.

