

# Iniettore&Connettore Geosteel

Polypropylene and glass-fibre injector, specific for fibre thread connector systems, made from Geosteel G ultra-high-strength galvanised steel-fibre sheets. Ideal for making Geosteel thread connectors for the connection of bundles and widespread strengthening systems from the Geosteel mesh range.

Easy to install, Geosteel Injector&Connector facilitates fastening of the Geosteel thread connector and subsequent injection of hyper fluid mortar or epoxy resin for grouting. Thanks to its chemical composition, polypropylene has a high resistance to impact and to abrasion, excellent thermal resistance and high levels of durability.



1. High tensile strength and versatility
2. Limited invasiveness: does not create an uneven appearance on the wall
3. Quick and easy to install
4. High level of durability
5. Excellent connection and co-operation in retrofitting structures using sheets and meshes
6. Excellent compatibility with matrices from the Geocalce and Geolite range
7. It facilitates the construction of thread connectors and the injection of Geocalce FL Antisismico, promoting and facilitating the consolidation of masonry.

## Areas of application

### → Intended use:

- Consolidation and strengthening of load-bearing walls by inserting in a widespread manner the Geosteel galvanised steel-fibre thread connector systems injected with Geocalce FL Antisismico, EN certified, hyper fluid geo-mortar based on pure natural NHL 3.5 hydraulic lime
- Connection and strengthening system for retrofitting load-bearing walls, vaults, cupolas or arches made of masonry, using Geosteel G galvanised steel-fibre bundles or basalt-fibre and stainless steel Geosteel Grid or AR glass-fibre and aramid Rinforzo ARV 100 meshes applied in a widespread manner
- Consolidation and strengthening of masonry arches by intrados binding using Geosteel galvanised steel-fibre thread connector systems injected with Geocalce FL Antisismico, EN certified, hyper fluid geo-mortar made from pure natural NHL 3.5 hydraulic lime
- Connection and strengthening system used to create banding and stringcourses in masonry elements and structures
- Creation of non-invasive end-plates to anchor chains made using Geosteel G galvanised steel-fibre sheets
- Strengthening of masonry pillars by localised confinement using Geosteel galvanised steel-fibre thread connector systems injected with Geocalce FL Antisismico, EN certified, hyper fluid geo-mortar made from pure natural NHL 3.5 hydraulic lime

## Instructions for use

### → Preparation

Polypropylene Geosteel Injector&Connector is ready to use, and is supplied complete with a plug to be fitted in the hole on the connector head at the end of injection operations. In order to counteract the active stress levels, the fibre thread connector system created using the Geosteel G range of sheets must be designed and sized, in terms of tensile strength, according to the substrate on which it is to be installed.

### → Preparation of substrates

Drill bores on the wall with a diameter of between Ø 20-24 mm according to the thickness and type of masonry texture, using a drill or continuous core drill. When the substrates are not damaged, use compressed air or manual or mechanical brushing to clean and remove any dust or oils that could compromise the adhesion of the mortar or resin used to grout the connector.

### → Application

Create the steel-fibre thread connector system by inserting a strip of sheet of appropriate width from the Geosteel G range to provide the minimum number of cords in the connector according to the design, in order to achieve the required tensile strength; make sure to create "threads" at the terminal part of the sheet strip

by cutting the supportive mesh, making the cut parallel to the cords themselves for a length equal to the desired "thread" on the facade. In the event of a connector with "threads" on both sides, this operation must be performed on both ends of the duly arranged fibre strip. Once the sheet is cut, roll the strip onto itself, taking care to create a cylinder of an appropriate diameter compared to the hole.

Next, install the connector thus created into the hole, then insert the glass fibre-reinforced polypropylene Geosteel Injector&Connector, so as to bend the end of the thread by 90°. According to the weight of the sheet used to form the connector, the tape may be folded using the Geosteel Bending machines to facilitate insertion of the Geosteel Injector&Connector. Finally, using the special hole located on the head of the insert, inject the pourable mortar, such as Geocalce FL Antisismico, to grout the fibre-thread connector system. When this phase is complete, the Geosteel Injector&Connector must be duly sealed with the cap provided. Depending on the type of substrate (concrete or masonry), the designer may opt for the connector to be grouted using Geolite Magma pourable geo-mortar or Geolite Gel thixotropic epoxy resin, or superfluid Epofill as an alternative to Geocalce FL pourable mortar based on pure natural hydraulic lime.

# Abstract

## Geosteel Injector&Connector connection and injection system

Supply and installation of a transversal connection system made with ultra-high-strength unidirectional galvanised steel-fibre sheet, made up of steel micro-cords compliant with ISO standard 16120 -1/4 2017 fixed to a fibre-glass micromesh, with a net fibre weight of approximately 670 g/sq.m. injected with a fluid, inorganic, breathable mortar based on pure natural hydraulic lime NHL 3.5 – such as Diatono Geosteel (thread connector) made with Geosteel G600 in combination with Geocalce FL Antisismico and Kerakoll's Geosteel Injector&Connector (Injector&Connector). certified technical characteristics of the connection:  $\sigma_{pull-out} = 2555 \text{ MPa}$  (brick) -  $2503 \text{ MPa}$  (tuff). Certified mortar characteristics: G/M15 mortar class (EN 998/2), permeability to water vapour 15 to 35 (EN 1745), compressive strength at 28 days  $\geq 15 \text{ N/mm}^2$  (EN 1015-11), elastic modulus 9.5 GPa (EN 13412), adhesive tension of the grouted bar  $\geq 3.5 \text{ MPa}$ .

The intervention is carried out as follows: possible repair of weakened surfaces (to be calculated separately); preparation of the entrance hole, with a size (diameter and depth) suited to the nature of the connector to be fitted, and subsequent removal of the mortar in the area around the created hole; preparation of the steel connector by cutting, creating "threads" and final rolling of the galvanized steel-fibre sheet, securing with a plastic tie; insertion of the connector into the hole (number, anchoring depth and spacing to be decided by a qualified technician); insert the polypropylene and glass-fibre-reinforced Geosteel Injector&Connector (Injector&Connector) into the steel fibre thread connector to bend the terminal part of the thread by 90°; low-pressure injection of fluid mortar for connector collaboration; fastening of the "threaded" cords, concealing the entire connector, and simultaneous pointing of the joints with mortar.

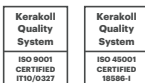
Numbers/quantities apply to a single connector.

### Technical Data compliant with Kerakoll Quality Standard

Density	$0.9 \text{ g/cm}^3$	
Break warp	$\epsilon_{\text{connector}}$	$\geq 50 \%$
Modulus of elasticity when stretched	$E_{\text{connector}}$	1200 MPa
Tensile strength	$\sigma_{\text{connector}}$	27 MPa
Head diameter	$\varnothing_{\text{head}}$	84 mm
Hole diameter	$\varnothing_{\text{hole}}$	19 mm
Shank length	Lshank	70 mm

## Warning

- Abide by any standards and national regulations
- protect from damp and UV light
- after application, the pieces must be protected from UV light, by application of a suitable finishing layer, within 6 weeks of installation
- the product is an item according to the definitions of the EC Regulation No. 1907/2006 and therefore does not require a Safety Data Sheet
- for any other issues, contact the Kerakoll Worldwide Global Service +39 0536 811 516 - [globalservice@kerakoll.com](mailto:globalservice@kerakoll.com)



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