

Steel DryFix® 12

The AISI 316 stainless steel helical bar, with a 12 mm diameter, is a high mechanical performance stainless steel helical bar for dry binding of structural elements using the Helifix® patented installation system.



Thanks to its particular shape and manufacturing process, Steel DryFix® 12 acts like a huge self-tapping screw, gripping the support, after a pilot bore has been drilled. The bar is suitable to connect together elements in brick masonry, raw earth, tuff, timber and in certain cases even concrete elements according to the mechanical characteristics of the support.



PRODUCT STRENGTHS

- CE marking
- Patented system
- Excellent durability guaranteed by AISI 316 stainless steel
- Bars tested according to standard EN 845-1, 2008
- No resin or mortar is required to fix the bar
- Can be installed in any weather conditions
- Excellent mechanical adherence to the support thanks to the shape of the bar
- Adherence can be certified on site using the bar pull-out system
- Certified high tensile and shear strength
- Flexible to accommodate normal seasonal shrinkage in the masonry
- Very fast and easy to install using the special Steel DryFix® 10-12 Driver attachment
- Low level of invasiveness and minimum aesthetic impact
- Low installation costs

AREAS OF USE

Use

- Connecting wall panels, in cases in which the teeth are not attached together well
- Break-fill work of damaged or cracked architraves
- Break-fill work at the soffit of masonry arches
- Break-fill work of decorative stone which decorates the structure at the back
- Connection of wooden beam heads to the masonry support
- Break-fill work of cracks in the masonry structure, made of brick, raw earth, tuff
- Limitation of the crack
- Seismic improvement of walls with emerging inner debonding/collapse of parts of the masonry

INSTRUCTIONS FOR USE

Preparation

The bars are supplied in lengths ready for installation, by means of the dedicated patented Helifix® piling system.

Preparation of substrates

The masonry must be prepared following in the instructions dictated by the PM, if appropriate.

In the case of through cracks after installing the break-fill work bars, it is advantageous to proceed with filling the cracks with geo-mortar made of pure natural lime NHL and geo-binder (such as GeoCalce® G Antisismico or GeoCalce® F Antisismico) or Biocalce® Pietra, depending on the support, and the injection of suitable slurry key to restore the material continuity of the masonry. For historical walls, proceed with the injection of GeoCalce® FL Antisismico.

Application

Dry joining of masonry in brick or tuff using Steel DryFix® 12 should be followed by drilling a pilot bore with a appropriate diameter depending on the consistency of the substrate and with a length possibly equivalent to all the lengths of the break-fill work bar that must be installed. After placing the Steel DryFix® 10-12 Driver attachment into the SDS Plus drill to engage, put the bar inside the pilot bore, tapping with percussion until it is completely inserted; after the bar has been inserted fill the end of the bore with the suitable geo-mortar (GeoCalce® G Antisismico, GeoCalce® F Antisismico, GeoLite®) or mineral epoxy adhesive (GeoLite® Gel), in a way that guarantees that the bore is perfectly sealed and that the hole opening is restored in a manner that guarantees perfect adhesion of the bar to the substrate also to the opening.

In order to assess the performance of adhesion/extraction between different supports, you are advised to contact our technical office. Pull-out test is accomplished on site using a suitable test kit Steel DryFix®.

SPECIAL NOTES

Bars are available in 800 – 1000 – 1250 – 1500 mm lengths. Delivery times will be agreed on each time. The Steel DryFix® 10-12 Driver attachment is essential for installation, and is supplied in packs of one.

ABSTRACT

The Steel DryFix® 12 AISI 316 stainless steel helical bar

Execution of reinforcement, and break-fill work of masonry made from brick, raw earth, tuff, wood and other material by means of Steel DryFix® 12 AISI 316 stainless steel helical bar, installed with Helifix® technology in specified pilot bore in the structure, subject to possible repair of weakened surfaces, by means of the appropriate chuck supplied Steel DryFix® 10-12 Driver attachment which is tapped into position. They include: (1) Making a pilot bore of a suitable diameter, according to the bar and to the material from which the element to be reinforced is composed; (2) Installing the bar inside the bore by means of the appropriate Steel DryFix® 10-12 Driver attachment; (3) Possible filling of the bore with suitable material, which will depend on the type of support, that is: GeoCalce® G Antisismico, GeoCalce® F Antisismico or Biocalce® Pietra, for masonry substrates; GeoLite®, for reinforced concrete supports; GeoLite® Gel for supports in reinforced concrete or other materials. The break-fill work bar must guarantee the minimum performance characteristics of the plan, in other words: tensile breaking load ≥ 28.3 kN; shear breaking load ≥ 17 kN; modulus of elasticity ≥ 150 GPa; ultimate elongation at rupture $\geq 3\%$; nominal area 29.8 mm².

The price is by unit of bar length actually laid.

Delivery and installation of all the materials described above as well as everything else required to finish the job is included. The following are excluded: restoration of degraded areas and repair of the substrate; mortar to fill and mask the bore; material acceptance tests; pre- and post-procedure testing, all aids required to perform the work.

TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Material	AISI 316 stainless steel		
Nominal diameter	\varnothing	12 mm	
nominal area of the bar	A_{helix}	29.8 mm ²	
Tensile breaking load, typical value	N	≥ 28.3 kN	UNI EN ISO 6892-1:2016
Shear breaking load of the bar	T	≥ 17 kN	UNI EN 846-7
Elastic tensile strength ($\epsilon = 0.2\%$)	$\sigma_{0.2\%}$	≥ 690 MPa	UNI EN ISO 6892-1:2016
Elastic modulus of the bar, average value	E_{bar}	≥ 150 GPa	UNI EN ISO 6892-1:2016
Break warp of the bar, characteristic value	ϵ_{bar}	$\geq 3\%$	UNI EN ISO 6892-1:2016
Packs:			
- Bar length	800 mm	Box. pc. 25	
- Bar length	1000 mm	Box. pc. 25	
- Bar length	1250 mm	Box. pc. 25	
- Bar length	1500 mm	Box. pc. 25	

Other lengths can be supplied on request and in the minimum order quantities stated. Delivery times will be agreed on each time

WARNING

- **Product for professional use**
- abide by any standards and national regulations
- when handling the material wear protective clothing and goggles, and follow the instructions regarding methods for applying the material
- contact with the skin: no special measures required
- storage on the work site: store under cover in a dry place, well away from substances that might damage it or its ability to adhere to the chosen matrix
- 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

The Rating classifications refer to the GreenBuilding Rating® Manual 2013. This information was last updated in November 2019 (ref. GBR Data Report - 12.19); please note that additions and/or amendments may be made over time by KERAKOLL SpA, for the latest version, see www.kerakoll.com. KERAKOLL SpA shall therefore be liable for the validity, accuracy and updating of information provided only when taken directly from its institutional website. The technical data sheet given here is based on our technical and practical knowledge. As it is not possible for us to directly check the conditions in your building yards and the execution of the work, this information represents general indications that do not bind Kerakoll in any way. Therefore, it is advisable to perform a preliminary test to verify the suitability of the product for your purposes.



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