

Steel Connect Wall

Perimeter connector for floor diaphragm.

Steel Connect Wall ensures the connection of the floor slab to the perimeter walls, guaranteeing the correct transfer of seismic actions to vertical structures reducing risks related to local collapse mechanisms.



1. High shear strength of the connection system
2. High pull-out resistance of the masonry connector
3. Protective galvanization
4. Intervention with reduced thicknesses
5. High mechanical adhesion to perimeter walls thanks to grouting with Geocalce FL Antisismico
6. High mechanical adhesion to concrete vertical elements thanks to grouting with Epofix

Areas of application

→ Intended use:

- Upgrade and improvement of the seismic behaviour of masonry and/or reinforced concrete structures
 - Suitable for the creation of floor diaphragms with Geolite FRC systems and traditional or lightweight concrete
 - Connection between the floor diaphragm and the seismic-resistant elements in order to ensure the structural continuity of the load-bearing elements of the building
- Reduction of the risk of local collapses in combination with the Geolite FRC system consisting of Geolite Magma Xenon and Steel Fibre.
 - Reduction of the risk of local collapses in combination with composite reinforced concrete slabs of at least 40 mm.

Instructions for use

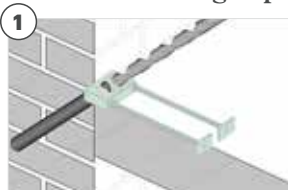
→ Preparation of the substrate

After propping up the floor slabs, remove any existing floors and screeds; roughen the concrete substrate by mechanical scarification or hydro-demolition to a depth deeper than or equal to 5 mm, equivalent to level 9 of the "Test kit for preparation of reinforced concrete and masonry substrates"; thoroughly remove all damaged concrete until a layer of solid, even and not carbonated concrete is reached. Then carefully remove rust from the reinforcing bars, which must be cleaned by brushing (manual or mechanical) or sandblasting. Clean the substrate removing any remaining dust, grease, oil and other contaminants using compressed air or a high pressure washer.

The solution here proposed can be adopted for different types of joisted floors. The substrate must in any case be meticulously prepared and cleaned following the instructions and prescriptions of the construction supervisor

→ Application

- ① Drilling with a roto-percussion drill or compressed air drill. Position the base element of the connector on the properly prepared substrate. Using the element as a guide, drill a 45° inclined bore with a diameter of at least 24 mm and anchoring depth 200 mm.



- ② Cleaning the bore. Choose a metal pipe cleaner with a diameter appropriate to the diameter of the bore and brush along the entire diameter of the bore and the entire depth at least twice in a rotary motion. Alternatively, starting from the bottom of the bore, blow with compressed air a minimum of two times until the return air flow is clear of visible dust. Use an extension if the bottom of the bore cannot be reached.



- ③ Saturate with water avoiding standing water in order to grout the bore with pourable mortar such as Geocalce FL Antisismico or Geolite Magma.



- ④ Fill the bore up to about 2/3 of the depth using Geocalce FL Antisismico pourable mortar in order to grout the bar to the perimeter wall. In case of vertical elements in reinforced concrete, fill using Epofix epoxy resin or Geolite Magma pourable mortar.



Instructions for use

- ⑤ Insert the M16 bar inside the bore applying a slight rotational movement to ease the elimination of any air bubbles and ensure complete filling of the bore. Once the bar has been inserted, clean the substrate from any leakage.



- ⑥ Reposition the base element of the Steel Connect Wall connector on the substrate; tighten the nut with a 23 mm sleeve, once the Geocalce FL Antisismico pourable mortar has hardened. In case of grouting with Epofix, respect the clamping times indicated in the product technical data sheet. Complete the creation of the floor diaphragm using the composite-action casting of the Geolite FRC system: Geolite Magma Xenon & Steel Fiber.



Certificates and marks



Abstract

Steel Connect Wall grouted with Geocalce FL Antisismico

Supply and installation of a perimeter connection for floor diaphragms to connect rigid floors with seismic-resistant elements will be carried out by drilling with a 45°-inclination and installing a 200 mm-long M16 threaded bar in S235 galvanised steel, thickness 20 mm and dimensions 250x70 mm, – connection type using Steel Connect Wall by Kerakoll. Technical characteristics of the connector: tensile strength of the connector, average value ≥ 31 kN; tensile strength of the non-plasticised connection system, average value ≥ 28 kN; tensile strength of the plasticised connection system, average value ≥ 25 kN; shear strength of the connector per 4 mm displacement, average value ≥ 20 kN. Grouting of the bar will be carried out using a fluid, breathable, structural geo-mortar based on pure NHL 3.5 natural hydraulic lime (such as Geocalce FL Antisismico by Kerakoll). Certified characteristics of the mortar: G/M15 mortar class (EN 998/2), permeability to water vapour 15 to 35 (EN 1745), compressive strength at 28 days ≥ 15 N/mm² (EN 1015-11), modulus of elasticity 9.5 GPa (EN 13412), adhesive tension of the grouted bar ≥ 3.5 MPa. The price is per unit actually laid; it includes drilling and preparation of the bore for the bar insertion. Delivery and installation of all the materials described above as well as everything else required to finish the job is included. Any restoration of degraded areas and repair of the substrate; material acceptance tests, pre- and post-procedure testing, all aids required for the execution of the work to be considered as indirect safety costs are excluded.

Steel Connect Wall grouted with Epofix

Supply and installation of a perimeter connection for floor diaphragms to connect rigid floors with seismic-resistant elements will be carried out by drilling with a 45°-inclination and installing a 200 mm-long M16 threaded bar in S235 galvanised steel, thickness 20 mm and dimensions 250x70 mm, – connection type using Steel Connect Wall by Kerakoll. Technical characteristics of the connector: tensile strength of the connector, average value ≥ 31 kN; tensile strength of the non-plasticised connection system, average value ≥ 28 kN; tensile strength of the plasticised connection system, average value ≥ 25 kN; shear strength of the connector per 4 mm displacement, average value ≥ 20 kN. Grouting of the bar will be carried out using a two-component, epoxy resin chemical anchoring agent, CE-marked, seismic category C2 on cracked and non-cracked concrete and compliant with the performance requirements of standard EN 1504-6 for the grouting of anchoring bars (such as Epofix by Kerakoll). Certified technical characteristics of the matrix: Working temperature -40°C +72 °C. Glass-transition temperature +67 °C (EN 12614). The price is per unit actually laid; it includes drilling and preparation of the bore for the bar insertion. Delivery and installation of all the materials described above as well as everything else required to finish the job is included. Any restoration of degraded areas and repair of the substrate; material acceptance tests, pre- and post-procedure testing, all aids required for the execution of the work to be considered as indirect safety costs are excluded.

Technical Data compliant with Kerakoll Quality Standard

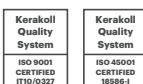
Material		Galvanized steel
Strength class		S235
Anchoring bar length	La	200 mm
Base length	Lb	250mm
Base height	hb	20mm
Rated diameter of the bar	ø	M16 mm
Reaction to fire		class A1
Pack		12 pcs box

Performance**HIGH-TECH****Steel Connect Wall grouted with Geocalce FL Antisismico**

Connector tensile strength, average value		≥ 31 kN
Non-plasticised connection system tensile strength, average value		≥ 28 kN
Plasticised connection system tensile strength, average value		≥ 25 kN
Connector shear strength per 4 mm displacement, average value	V _c	≥ 20 kN

Warning

- 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
- store the material under cover in a dry place, well away from substances that might damage it
- 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 Kerakoll Technical Customer Service:
+ 39 0536.811.516
www.kerakoll.com/contatti



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