

Geolite kerakoll

The first geo-mortar
for monolithic
reinforced concrete
repair.

What is Geolite?

Geolite is the ground-breaking range of mineral geo-mortars for eco-friendly concrete repair born from Kerakoll's research into innovative materials and environmentally friendly raw materials. Geolite means innovative mineral products that are easy to apply, and which positively overcomes the limits of traditional cement-based, polymer-modified mortars. Geolite repairs concrete guaranteeing a monolithic repair with a high level of natural dimensional stability, and the same kind of durability as mineral rock, in line with the highest international standards.

Geolite is naturally stable and as solid as a rock over time.

The technical and performance limits of standard cement- and chemical-additive-based mortars and the complex layered systems used to repair concrete are a thing of the past, now that Geolite, the ground-breaking, eco-friendly, mineral geo-mortar, can passivate, repair, finish and protect deteriorated concrete in one go.



Geo-binder

Geo-binder is the result of extensive research conducted by Kerakoll's GreenLab research centre, which, for the first time in the world, has enabled the development and use of innovative binders and materials with a low environmental impact never before used in the building industry.

For more than a decade, the application of geo-binder has enabled the formulation of geo-mortars with high technological content, obtaining ground-breaking solutions for repairing and strengthening reinforced concrete.

A modern mix concept, a formulation design with high added value in terms of durability and ease of application that allows geo-mortars to be likened to natural rocks once hardened thanks to the special inorganic mineral crystalline structure .

This is why they have been designated with the term GEO.

*Geomalta minerale a base di
geolegante per il ripristino
monolitico del calcestruzzo armato.
Tixotropica a presa normale 80 min.*

EN → Mineral geo-mortar with geobinder base for monolithic repair of reinforced concrete. Thixotropic, normal setting 80 min.

Tixotropica a presa normale 80 min.

DE → Mineralischer Geomörtel auf Basis von Geobindemittel für den monolithischen Wiederaufbau von Stahlbeton. Thixotrop, normal abbindend nach 80 Min.

FR → Géomortier minéral à base de géoliant pour la restauration monolithique du béton armé.

Thixotrope, à prise normale 80 min.

Rating 3

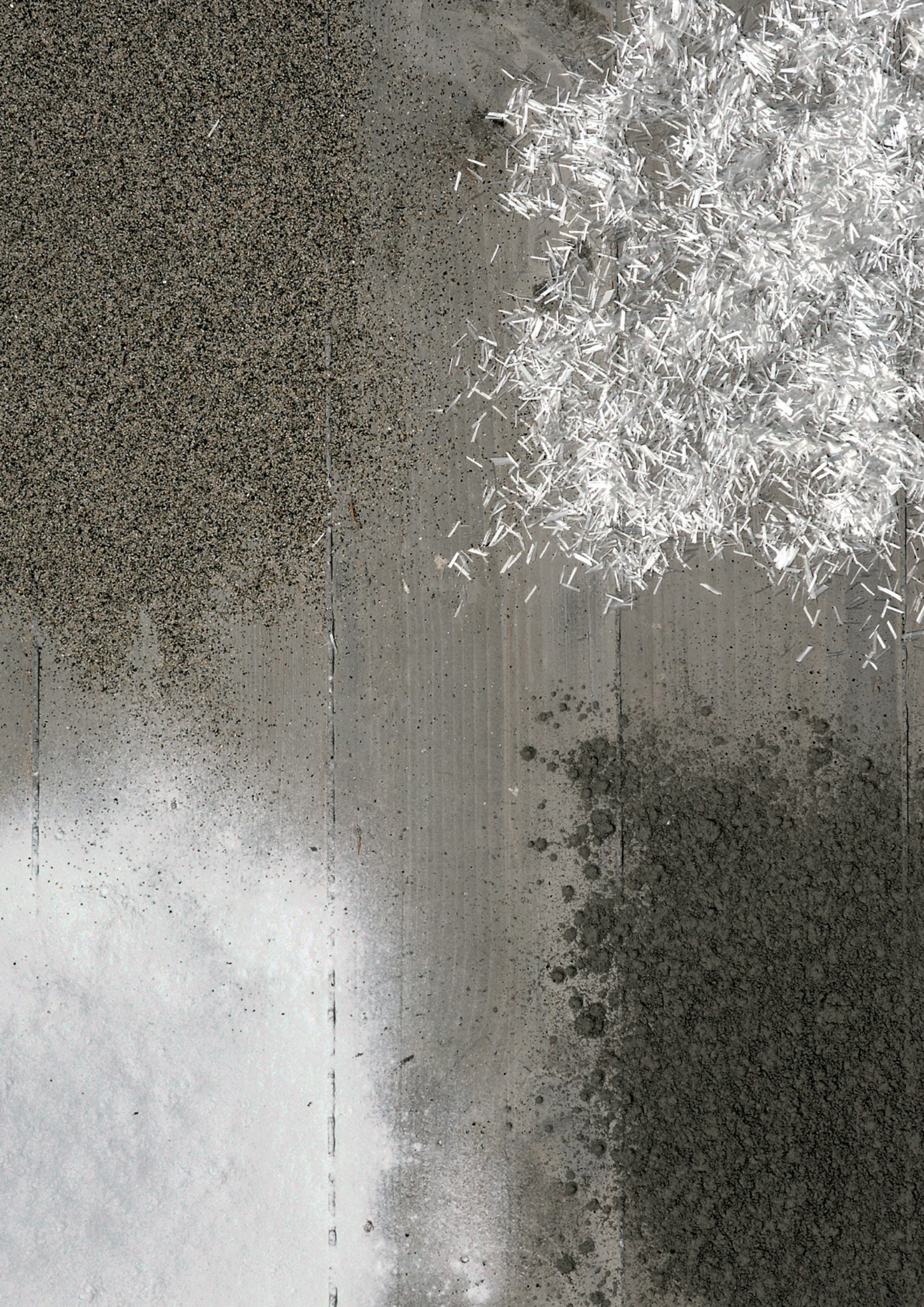


- × Regional Mineral ≥ 60%
- × Recycled Regional Mineral ≥ 30%
- ✓ CO₂ Emission ≤ 250 g/kg
- ✓ VOC Low Emission
- ✓ Recyclable

**Geolite
kerakoll**

25 kg

Geolite



Geolite, only mineral elements for durability.

Kerakoll's ground-breaking geo-binder

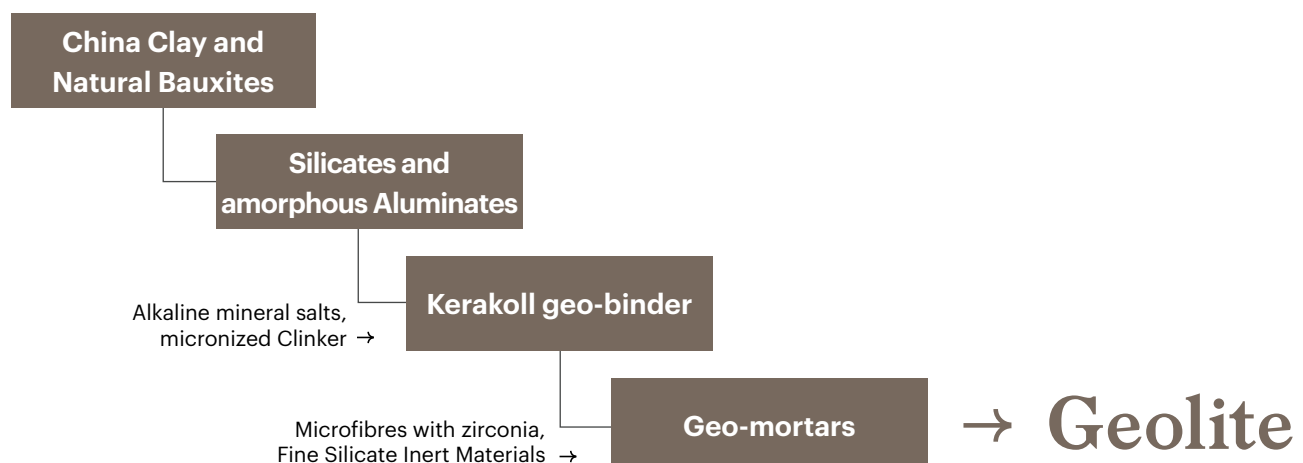
Special selection of innovative hydraulic binders made from natural raw materials and low-emission production processes. The high and natural dimensional stability, which results in practically zero shrinkage values if compared to the use of common Portland cement, guarantees greater resistance to chemical agents and improved mechanical properties even in extreme conditions.

Microfibres with zirconia

The use of inorganic microfibres with a high zirconia content in Geolite further improves mechanical resistance and increases flexural and break strengths, helping to stabilise geo-mortars in the early stages of the hardening process.

Extra-fine Inert Materials

Extra-fine inert materials used for the first time to develop a class R4 concrete repair mortar. The grain size of just 0-0.5 mm combined with the natural dimensional stability of Kerakoll's geo-binder guarantees high protection of reinforcement bars by embedding.



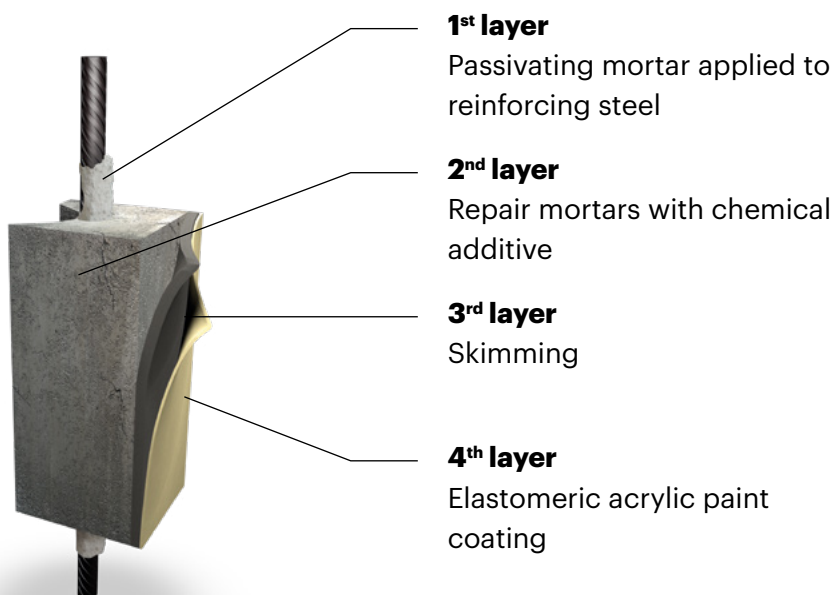
Geolite, the monolithic concrete repair is born.

Polymer-cement mortars, the limits of layered repair.

In reinforced concrete, carbonation is one of the main causes of material degradation leading to corrosion of the metal rebars. Corrosion triggers a chain reaction that leads to the reduction of the reinforcing rod section (performance loss) and to the debonding of the concrete cover (spalling); that may cause the complete exposure of reinforcing steel to the aggressive action of the environment, further accelerating the corrosion process itself.

In the layered repairs introduced in the 1980s, a variety of materials are applied in layers to protect the reinforcing bars. In theory, the variable elastic modulus stratigraphy compensates for the performance deficiencies of the individual products (technical and chemical) but is limited by building site conditions that can impair its effectiveness.

The layered repair inevitably continues to be the weak point of the concrete structure intervention.



Geolite, the ground-breaking, eco-friendly, mineral geo-mortar that can passivate, repair, finish and protect deteriorated concrete in one go.

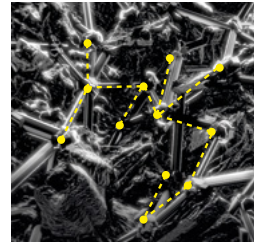
1. Passivates

Thanks to its unique rheology and extra-fine grain size, Geolite provides perfect embedding of reinforcing bars. The unconventional alkaline content of the new Kerakoll geo-binder ensures total protection against oxidation of reinforcing bars.



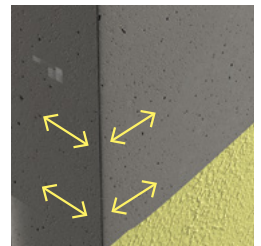
2. Reconstructs

The crystalline mineral matrix gives geo-mortars a high level of natural dimensional stability allowing you to rebuild and repair the monolithic properties of the original structure.



3. Corrects

Thanks to its extra-fine grain size, Geolite can be trowelled and sponged to give the monolithic repair a surprising degree of finish with a superior aesthetic level.

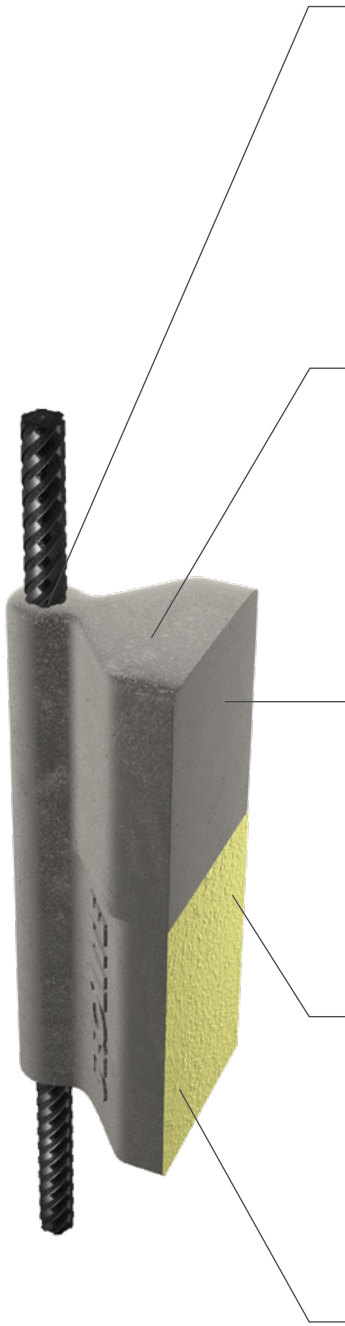
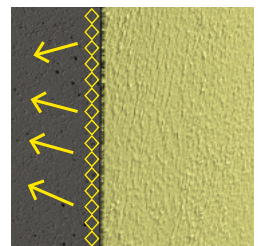


4. Protects

Monolithic repairs carried out with Geolite are insensitive to the aggression of carbon dioxide and permanently protect concrete from the penetration of rainwater and aggressive substances.

5. Decorates by crystallization

Geolite Microsilicato is the natural Geolite decorative product: the geo-active silicate micro-particles penetrate into the micro-pores and crystallize to create a single body that guarantees the monolithic continuity of the entire repair.



Geolite, four CE-Marks, four times safer.

Geolite: the only monolithic repair compliant with European standard EN 1504.

According to national legislation, all materials to be used in the maintenance, repair, strengthening and protection of existing reinforced concrete structures must be CE-marked in accordance with European standard EN 1504. Geolite is the world's only range of geo-mortars to obtain four different CE marks.

Geolite meets every requisite of European standards EN 1504-7 (passivation of reinforcing bars), EN 1504-3 (structural repair) and EN 1504-2 (protection, in the case of the thixotropic version) and EN 1504-6 (anchoring).



→ **Geolite**

**Eco-friendly, monolithic
restoration**

Geolite: R4 structural class safety guaranteed, whatever the conditions.

European standard EN 1504 stipulates 4 resistance classes for repair mortars.

Non-structural mortars: Classes R1 and R2 are lower mechanical and physical resistance mortars, suitable for repairing concrete that does not contain reinforcement, or as a finishing mortar.

Structural mortar: Classes R3 and R4 are high-performance mortars for use in reconstruction, structural repair and poured sleeve reinforcement in reinforced concrete.

Class R4 Geolite brings the ultimate level of performance whatever the conditions at the building site, as it has been tested and certified in both CC and PCC conditions.

Geolite: simplifies reinforced concrete repair and protection specifications, according to European standard EN 1504-9.

Geolite can be used to carry out repairs based on the Principles and Methods for repair and protection laid down in European standard EN 1504-9. The monolithic nature of the repair guaranteed by Geolite makes the job of architects and engineers much simpler when it comes to drawing up specifications; this in turn guarantees the easier and more effective execution of the reinforced concrete maintenance job, in accordance with applicable regulations.



Geolite geo-mortars

Moisture control	Concrete restoration	Concrete restoration	Structural strengthening	Preserve or restore corrosion protection (passivation)	Increase resistance	Control anodic areas	Control carbonation
MC METHOD 2.2 EN 1504-2	CR METHOD 3.2 EN 1504-3	CR METHOD 3.1 - 3.3 EN 1504-3	SS METHOD 4.2 - 4.4 EN 1504-3/6	RP METHOD 7.1 - 7.2 EN 1504-3	IR METHOD 8.2 EN 1504-2	CA METHOD 11.2 EN 1504-7	PASSES CARBONATION RESISTANCE EN 1504-3

Geolite Microsilicato

Ingress protection	Moisture control	Increase resistance
PI METHOD 1.3 EN 1504-2	MC METHOD 2.2 EN 1504-2	IR METHOD 8.2 EN 1504-2

Geolite is Benor certified



When exposed to the air and cured in a relatively dry environment (PCC – cured in a climatic chamber at 21 ± 2 °C and R.H. of 60 ± 10%), Geolite exceeds the performance limits set by European standard EN 1504-3, Structural Class R4: therefore it can be used in the repair and consolidation of reinforced concrete structures which in normal service are exposed to the air (front sections of balconies, pillars, beams, etc.)



When kept underwater for the duration of the curing process (CC – underwater curing at 21 ± 2 °C) Geolite exceeds the performance limits set by European standard EN 1504-3, Structural Class R4; therefore it can be used in the repair and consolidation of reinforced concrete structures which in normal service are underwater (channels, pools, tanks, etc.)



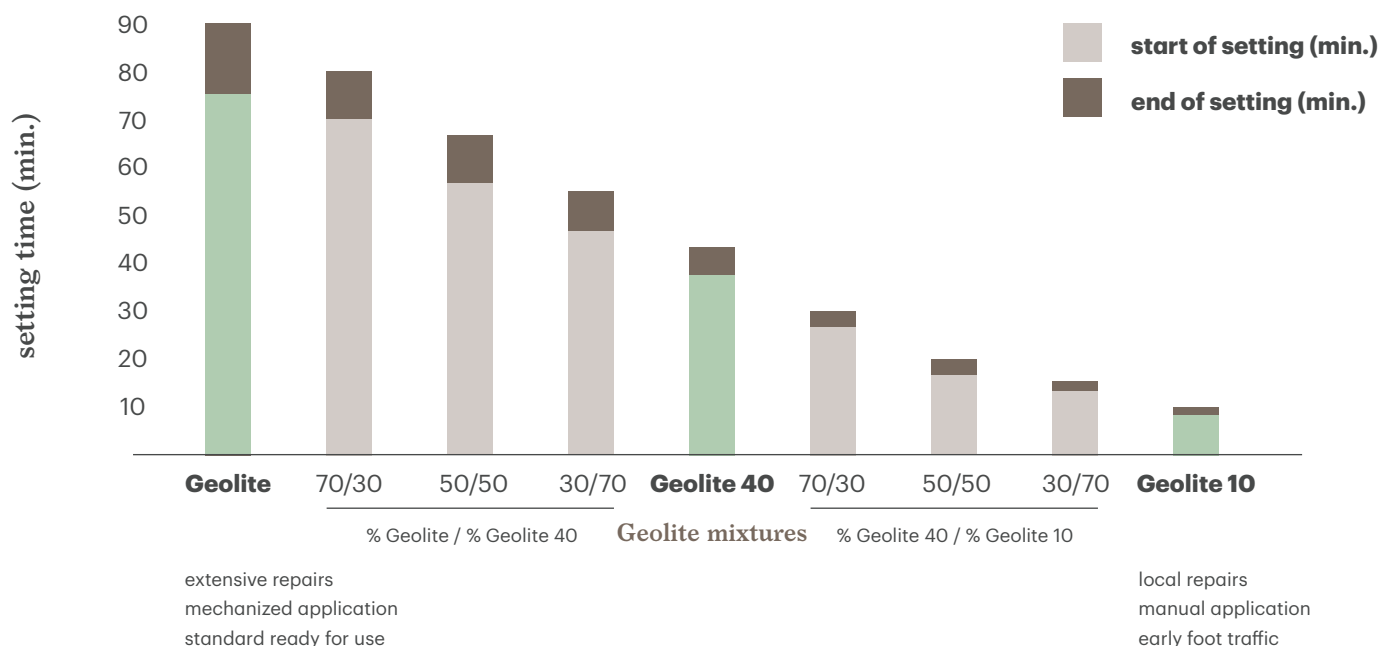
Geolite, geo-mortar with customizable setting times.

Geolite: the first ever class R4 geo-mortar range with customizable setting times.

Kerakoll researchers have developed the innovative Geolite range in three thixotropic versions with mixable setting times: 80, 40 and 10 minutes. Geolite adapts to all building site requirements depending on the type of work and climatic conditions by modulating its setting time to achieve the desired workability while maintaining the technical characteristics of the product.

Choose a setting time

Geolite guarantees the best technical performance and offers customizable setting times to successfully solve all building site application needs.



Geolite, innovative, safe and eco-friendly technology.

Geolite: the world's safest geo-mortar.

Geolite also breaks new ground in the care shown for the environment and for human health. Tests carried out by Kerakoll GreenLab researchers measure extremely low emissions of volatile organic compounds (VOC) from the moment of preparation on site to hours and days following repairs, as confirmed by EC 1 Plus certificates issued by the GEV. Geolite ranks high not only in protecting the health of operators but also in terms of environmental product performance, as measured by the EPD – Environmental Product Declaration study, confirming and guaranteeing that Geolite is among the safest construction products in the world.

Low CO₂ emissions

Reduces pollution as it emits low amounts of greenhouse gases during its production (<250 g/kg CO₂).

IAQ VOC

Geolite is the first repair mortar with extra low volatile organic compound (VOC) emissions, ensuring better air quality.

Locally-sourced minerals

Contains regional, natural minerals from recycled raw materials.

Can be recycled as inert material

Once hardened, Geolite can be recycled as inert waste as it does not undergo any physical, chemical or biological transformation.

SGS certificate

The Swiss Certification Institution SGS certifies the measurement method used in Kerakoll's environmental sustainability GreenBuilding Rating.



* Émission dans l'air intérieur Information sur le niveau d'émission de substances volatiles dans l'air intérieur, présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions).



Geolite, monolithic and eco-friendly concrete repair.

2 mineral products, just 2 application steps, all done in just 5 hours.

Geolite is a ground-breaking, eco-friendly geo-mortar that guarantees monolithic repairs that withstand the passing of time.

Geolite is the only product of its kind designed to make your job easier on the building site:

- single-component, it can be mixed only using water
- high workability
- customizable setting time
- concrete repair becomes a quick, easy and safe job.

1. Geolite



Geo-mortar that with just one application:

- creates barrier protection of reinforcing bars
- reconstructs and restores the concrete
- smooths and levels the surface
- protects from environmental attack

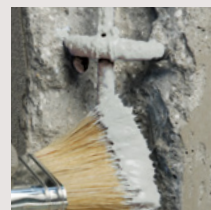
Layered system and technologically obsolete products.

More than 5 products, 5 application steps, 6 working days.

The outdated modified-polymer cementitious mortars that came into use in the 1980s are complex and difficult -to-apply systems, as well as being expensive and more sensitive to climatic conditions at the building site which can impair their performance and durability. As a result, even today construction professionals are forced to prescribe repair jobs featuring the application of various layers of different materials which can lead to errors at the building site or the incomplete application of the system, thereby compromising the overall effectiveness of the intervention.

1st day

1. Passivating mortar



Application of anti-corrosion, two-component cementitious mortar to protect reinforcing bars.

end of intervention: 5 hours

Geolite makes the job of application professionals much easier compared to traditional repair mortars; it eliminates the need for difficult sequences, and the application and use of different products with fixed setting times and a high risk of error.

2. Geolite Microsilicato



Geo-paint that:

- decorates and protects
- gives the repair monolithic continuity
- assures constant breathability

2nd day

3rd day

6th day

2. Additives



Preparation of the polymer-modified mortar with addition of any curing or retarding additives.

3. Large-grain mortar



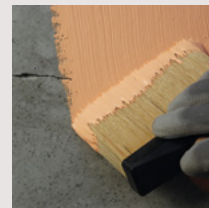
Application of fibre-reinforced, modified-polymer mortar with controlled shrinkage to rebuild the concrete.

4. Fine-grain mortar



Application of cement-based mortar as a concrete finish layer.

5. Elastomeric paint



Application of protective, anti-cracking elastomeric paint coating.

Geolite, certified composite systems for structural strengthening.

Geolite revolutionises the world of structural strengthening as well; thanks to its intrinsic characteristics, it is the ideal matrix for certified high-performance composite systems. Geolite, working together with short steel fibres, makes it possible to obtain composite structural strengthening systems that work in perfect synergy with existing structures.

Designed to make your job easier on the building site, it simplifies the application of the most complex systems, making even composite systems with Geosteel and Steel Fiber common practice.

Kerakoll Composite Systems

FRC – Fiber Reinforced Concrete

Geolite Magma Xenon & Steel Fiber



SRP – Steel Reinforced Polymer

Geolite Gel & Geosteel



SRG – Steel Reinforced Grout

Geolite & Geosteel



Certified for structural use, Steel Fiber's high-performance short fibres, in combination with Geolite Magma Xenon, make up the certified Geolite FRC system for reinforcing floors and reinforced concrete elements.

The combination of Geolite or Geolite Gel with the long-fibre sheets of the Geosteel family form the Ce-marked Geosteel SRG and Geosteel SRP composite systems for structural strengthening respectively; they both are able to work in synergy with existing structures, guaranteeing perfect monolithic properties with the substrate thanks to Geolite's technology.

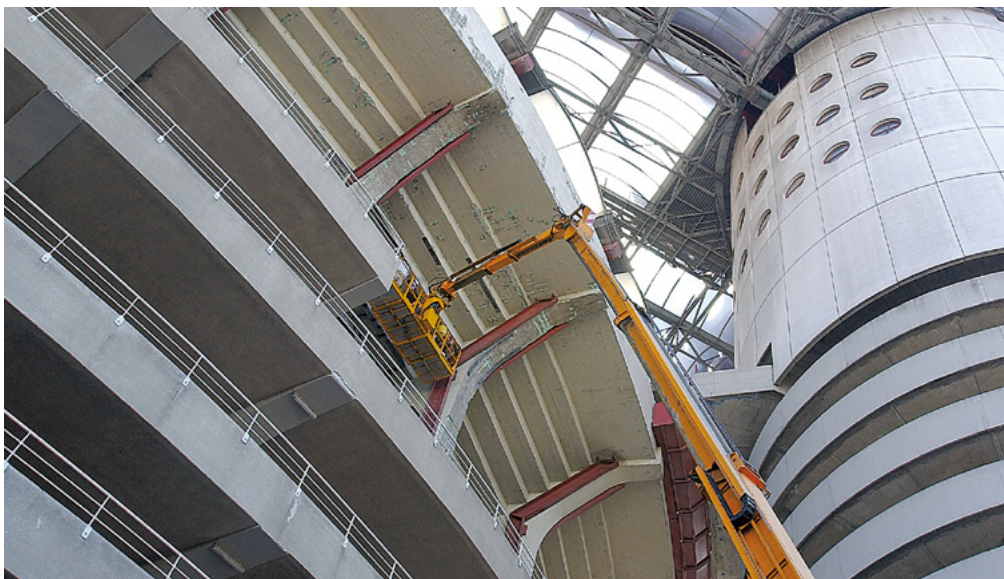


Geolite, the geo-mortar range for monolithic concrete repair.

The technical and performance limits of standard cement- and chemical-additive-based mortars and the complex layered systems used to repair concrete are a thing of the past, now that Geolite, the ground-breaking, eco-friendly, mineral geo-mortar, can passivate, repair, finish and protect deteriorated concrete in one go. Result: naturally stable repairs that blend in with the concrete to form a monolithic element with a durability akin to mineral rock.

Geo-mortars for concrete repair are divided into:

- **thixotropic geo-mortars**
- **fluid geo-mortars**
- **complementary products**



Thixotropic geo-mortars

Geolite

Thixotropic geo-mortar for passivating, repairing, finishing and protecting structures in reinforced concrete, anchoring and fixing metal elements. Specific for general repair.

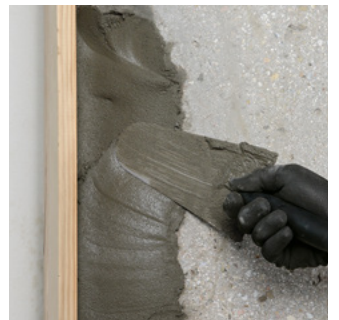
- Thixotropic, class R4
- Normal setting: 80 min.
- Applicable by hand and machine
- Inorganic mineral matrix in certified Geosteel SRG systems



Geolite 10

Thixotropic geo-mortar for passivating, repairing, finishing and protecting structures in reinforced concrete, anchoring and fixing metal elements. Specific for operations involving mobile platforms, low temperatures and where the result must be ready for use quickly.

- Thixotropic, class R4
- Rapid setting 10 min
- Water-resistant
- Paintable after 4 hour



Geolite 40

Thixotropic geo-mortar for passivating, repairing, finishing and protecting structures in reinforced concrete, anchoring and fixing metal elements. Specific for operations involving mobile platforms, low temperatures and where the result must be ready for use quickly.

- Thixotropic, class R4
- Semi-rapid setting 40 min
- Water-resistant
- Paintable after 4 hour



Geolite Silt

Mineral, lightened geo-mortar/ finishing product for concrete reconstruction and finishing.

- Thixotropic, class R2
- High coverage
- For the monolithic protection of concrete
- Paintable after 4 hour



Fluid geo-mortars

Geolite Magma

Pourable, multipurpose geo-mortar for passivating, repairing and consolidating structures in reinforced concrete with a swelling effect for anchoring and fixing metal elements.

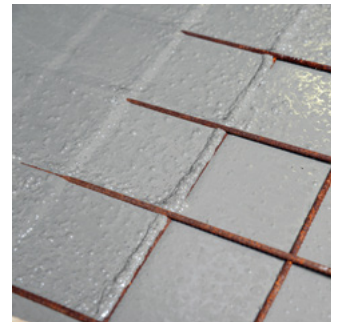
- Pourable, multipurpose, class R4
- Normal setting: 60 min.
- Inorganic mineral matrix in certified Geosteel SRG and Geolite FRC systems



Geolite Magma 20

Pourable geo-mortar for passivating, repairing and consolidating structures in reinforced concrete with a swelling effect for anchoring and fixing metal elements. Specific for operations at low temperatures and when quick use is needed.

- Pourable for grouting, class R4
- Rapid setting 20 min
- Early foot traffic



Geolite Magma Xenon

When combined with Steel Fiber it forms a certified, fibre-reinforced, pourable geo-mortar with high ductility for passivating, repairing and consolidating reinforced concrete structures.

- Certified, pourable FRC system
- High workability
- It does not need additional rebars
- Thicknesses from minimum 15 mm



Structural gel

Geolite Gel

Two-component, epoxy thixotropic gel system for anchoring and fixing metal elements. Organic mineral matrix in combination with steel sheets in certified Geosteel SRP structural strengthening systems.

- Certified for moist impregnation of Geosteel G sheets
- High workability even at high temperatures
- Excellent adhesion to any substrate
- High glass-transition temperature T_g



Decorative geo-paint

Geolite Microsilicato

Filling, "mottled" effect geo-paint for monolithic protection of new or repaired concrete against carbonation. Resistant to atmospheric agents, algae and mould.

- Anti-carbonation monolithic covering
- Breathable
- Protects and regenerates concrete surfaces with fine-grain finishing
- Can be applied after 4 hours on repairs carried out with Geolite 10 or Geolite 40 geo-mortars



Geomalta minerale a base di geolegante per il ripristino monolitico del calcestruzzo armato. Colabile multiuso a presa normale 60 min.

EN - Mineral geo-mortar with geo-binder base for monolithic repair of reinforced concrete. Multipurpose, pourable, normal setting 60 min.
DE - Mineralischer Geomörtel auf Basis von Geobindemittel für den monolithischen Wiederaufbau von Stahlbeton. Gießfähiges Mehrzweck-Produkt, normal abbindend 60 Min.
FR - Geomortier minéral à base de géoliant pour la restauration monolithique du béton armé. Coulable à usages multiples, à prise normale 60 min.

Rating 4

- Regional Mineral > 60%
- Recycled Regional Mineral > 30%
- CO₂ Emission < 250 g/kg
- VOC Low Emission
- Recyclable



**Geolite
Magma
kerakoll**

25 kg

Geomalta minerale a base di geolegante per l'inghisaggio monolitico nel calcestruzzo armato. Colabile, a presa rapida 20 min.

Mineral geo-mortar with geo-binder base for monolithic repair of reinforced concrete. Rapid setting 20 min. Pourable, suitable for the monolithic repair of reinforced concrete.

Rating 4

- Regional Mineral > 60%
- Recycled Regional Mineral > 30%
- CO₂ Emission < 250 g/kg
- VOC Low Emission
- Recyclable



**Geolite
Magma 20
kerakoll**

25 kg

Geomalta minerale a base di geolegante per il rinforzo monolitico del calcestruzzo armato e fibrorinforzata.

Rating 2

- Regional Mineral > 40%
- Recycled Regional Mineral > 50%
- CO₂ Emission < 250 g/kg
- VOC Low Emission
- Recyclable



**Geolite
Xenon**

25 kg

Geomalta minerale a base di geolegante per la rasatura e rasatura di superfici. Spessori da 2 a 10 mm.

Rating 4

- Regional Mineral > 60%
- Recycled Regional Mineral > 30%
- CO₂ Emission < 250 g/kg
- VOC Low Emission
- Recyclable



**Geolite
Silt
kerakoll**

15 kg

Geolite Silt

Geomalta minerale a base di geolegante per il ripristino monolitico del calcestruzzo armato. Tixotropica a presa normale 80 min.

EN -> Mineral geo-mortar with geobinder base for monolithic repair of reinforced concrete. Thixotropic, normal setting 80 min.
Tixotropica a presa normale 80 min.
DE -> Mineralischer Geomörtel auf Basis von Geobindemittel für den monolithischen Wiederaufbau von Stahlbeton. Thixotrop, normal abbindend nach 80 Min.
FR -> Géomortier minéral à base de géoliant pour la restauration monolithique du béton armé. Thixotrope, à prise normale 80 min.

Rating 3

- Regional Mineral > 60%
- Recycled Regional Mineral > 30%
- CO₂ Emission < 250 g/kg
- VOC Low Emission
- Recyclable

Geomalta minerale a base di geolegante per il ripristino monolitico del calcestruzzo armato. Tixotropica a presa rapida 10 min.

Mineral geo-mortar with geobinder base for monolithic repair of reinforced concrete. Thixotropic, rapid setting 10 min.
Mineralischer Geomörtel auf Basis von Geobindemittel für monolithischen Wiederaufbau von Stahlbeton. Thixotrop, schnell abbindend nach 10 Min.

Rating 4

- Regional Mineral > 60%
- Recycled Regional Mineral > 30%
- CO₂ Emission < 250 g/kg
- VOC Low Emission
- Recyclable

Geolite 10

Geolite 40

Geolite kerakoll

Geopittura minerale per la protezione decorativa del calcestruzzo. Traspirante, anticarbonatazione. Effetto gran fine.

Rating 2

- Regional Mineral > 60%
- CO₂ Emission < 250 g/kg
- VOC Low Emission
- Recyclable

Geolite Microsilicato kerakoll

4 L e

25 kg

25 kg

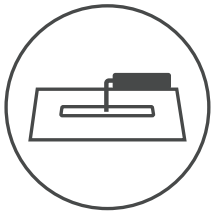
Adesivo per il rinforzo monolitico SRP del calcestruzzo armato. Tixotropico per incollaggi e inghisaggi strutturali.

Rating 4

Geolite Gel kerakoll

Part 5 kg

Why choose Geolite.



Benefits for application professionals

Geolite is easy to use: less products on the building site, simplified application

Geolite is easy to use and easy to select: there are only 2 types of mortar (thixotropic and fluid) with varying setting times which can be mixed and matched to find the perfect combination to suit the conditions at the building site. Unlike complex layered systems, with Geolite you can't go wrong.

Geolite is quick and saves you time

It repairs the concrete and you finish the job (including protective decoration) in 5 hours instead of the 6 days needed with conventional systems (corrosion protection product + mortar with additives + finish + decoration).

Geolite is safe: protects your health as well as the environment

Geolite is an eco-friendly, mineral geo-mortar which, compared to polymer-cement mortars, drastically reduces CO₂ emissions making it kinder on the environment as measured by the EPD – Environmental Product Declaration study. Geolite is also the world's first EC 1 Plus-certified, class R4 geo-mortar with very low VOC emissions, that is 100% safe for users.

Geolite is guaranteed; you can't go wrong

Hand and machine application that helps and speeds up the work, hot or cold weather, extensive or localised intervention: with Geolite you always have the solution at hand and never make mistakes, achieving safe monolithic repair in all building site conditions. CE mark, quality certificates and lab tests guarantee a result of the highest standard.



Benefits for resellers

Geolite is also designed for resale

Fewer products, less warehouse space needed, less initial outlay. Single-component materials only. No solvents or hazardous toxic substances. Simpler, safer warehouse management and product conservation.

Geolite is easy to recommend

Easy, intuitive system, easy to use by warehouse operatives. Impossible to go wrong in the choice and delivery of product. With Geolite you can be sure to offer an excellent service because you will recommend the most innovative and safe system that makes your customers' work easy.



Benefits for end users

Geolite guarantees a job well done every time

Recover and regenerate your property, choosing the wisest way to invest your money: with the guarantee of a job well done that will last for longer. Repair work takes much less time, meaning less inconvenience from having building work underway, and much lower costs.

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kerakoll

