# Fugalite Invisibile

**Waterproof, photochromatic, decorative resin for the grouting and bonding of glass mosaic and low-thickness ceramic tiles. Guarantees aesthetic continuity.**

**Fugalite Invisibile is ultra-fine recycled micro glass beads, with a high refractive power, ideal for bonding and grouting glass mosaic, wood-effect tiles, and low thickness stone tile effect coverings without compromising the aesthetic, functional and hygenic continuity. Fugalite Invisibile is the solution to keep intact the beauty of artistic glass mosaics and blends.**


KERAKOLL MONOPACK B A SYSTEM

GREENBUILDING RATING REF. GBR DATA REPORT 01.24 APPROVED

## Rating 3

- × Regional Mineral ≥ 30%
- ✓ VOC Low Emission
- ✓ Solvent ≤ 5 g/kg
- × Low Ecological Impact
- ✓ Health Care

1. Ideal to bond and grout glass mosaic
2. Ideal to grout thin corrected slabs with narrow or adjacent joints
3. Internal floors and walls
4. The perfect roundness of the micro glass beads gives an excellent workability
5. Impermeable to water, stains and dirt
6. Prevents the development of mould and bacteria
7. Approved for marine use
8. Bacteriostatic and fungistatic product (CSTB method)*

kerakoll

** Tests carried out according to CSTB method, bacterial and fungal contamination*

# Areas of application

→ Use
Water-resistant grouting of joints with high chemical and mechanical resistance and a high level of hardness; bonding of glass mosaic.

Materials to be grouted:
- glass and ceramic mosaic, of all types and formats
- low thickness porcelain tiles, slabs, ceramic tiles and recomposed materials

Flooring and walls in indoor, domestic, commercial and industrial applications and street furniture subject to permanent or occasional contact with chemical substances, in environments subject to heavy traffic, heated floors, also in areas subject to thermal shock and freezing.

→ Field of application Directive CE MED
Environmentally compatible vitreous grout and adhesive used as adhesive and/or as sealant between tiles.
Maximum mass per area 1405 g/m²
Thickness as adhesive layer 0.9 ± 0.1 mm
Thickness as sealant between tiles 3.9 ± 0.1 mm
As finishing material for all exposed interior and concealed or inacessible surfaces. When intended for bulkhead and ceiling, the product may be applied to any non-combustible support having a thickness equal or greater than 10 mm and a density ≥ 656 kg/m³. When intended for decks the product may be applied to any metallic support, any non combustibile support an any material having low flame spread characteristics. Do not use on porous flooring for which more specific or alternative chemical resistances are required compared with those listed in the chemical resistances table, to grout elastic expansion or fractionizing joints, in swimming pools, thermal water baths and fountains, or on substrates that are not fully dry and subject to moisture rising.

# Instructions for use

→ Preparation of substrates
As a grout: before grouting joints, check that tiles have been laid correctly and are anchored perfectly to the substrate. Substrates must be perfectly dry. Grout joints in accordance with the recommended waiting time indicated on the relative data sheet for the adhesive used. For mortar substrates, wait at least 7 – 14 days depending on screed thickness, ambient weather conditions and on the level of absorption of the covering and the substrate. Any water or moisture rising can cause vapour pressure to accumulate, which may in turn loosen the tiles on account of the complete non-absorbency of the grout or of the tiles themselves. Joints must be free from any excess adhesive, even if already hardened. Furthermore they must be of an even depth for the whole width of the tile covering, thereby ensuring maximum chemical resistance. Any dust and loose debris must be removed from joints by carefully cleaning them with vacuum cleaner. The surface of the coating material to be grouted must be dry and free from dust or building dirt; any residual protective coatings must first be removed using specific products. Before grouting joints, check the cleanability of the tile covering, as porous or highly micro-porous surfaces may cause cleaning difficult. It is advisable to perform a preliminary test on tiles not to be laid or in a small, concealed area.

As an adhesive: substrates must be compact and solid, free of dust, oil and grease, dry and free from moisture rising, with no loose debris or flaky parts such as residues of cement, lime and paint coatings, which must be completely removed. The substrate must be stable, without cracks and have already completed the curing period of hygrometric shrinkage. Uneven areas must be corrected with suitable smoothing and finishing products. On screeds and renders/plasters which are highly absorbent and have dusty, flaky surfaces, it is advisable to first apply Active Prime Fix, following the instructions provided in the technical data sheet, in order to reduce the water absorption and improve spreadability of the adhesive.

→ Preparation
Fugalite Invisibile is prepared by mixing together parts A and B from the bottom upwards, using a low-rev (≈ 400/min.) helicoidal agitator, respecting the preset ratio of 2.82 : 0.18 of the packs. Pour part B into the bucket containing part A, being careful to mix the two parts uniformly until a smooth, even coloured mixture is obtained. In any case, mix only enough grout that can be used in full within 45 min. at +23 °C, 50% R.H. Fugalite Invisibile product buckets must be stored at a temperature of approx. +20 °C for at least 2-3 days before

# Instructions for use

use. Higher temperatures make the mixture too fluid and shorten hardening times, while lower temperatures make the mixture harder to spread and slow down setting times. At temperatures of less than +5 °C, the product will no longer set.

→ Application as grout: Fugalite Invisibile must be applied evenly on the tile covering with a hard rubber spreader. Grout material has to be completely filled between entire joint areas, the application has to be done diagonally with respect to the joints. If grouting is to be on joints only, it is recommended that a test be carried out in advance before laying to ensure the surface can be properly cleaned. Remove most of the excess grout immediately using the spreader, leaving only a thin film on the tile.

→ Cleaning as grout: begin cleaning the tilework when the grout is still fresh. On completion, clean up the surface using a thick, large-sized sponge, preferably made of cellulose, damped in clean water to avoid removing grout from the joints. Use circular movements to soften the film of grout on the tiles and finish cleaning the joint surface. Specific high-dispersion polymers ensure all grout residues are removed using only a small amount of water. The use of an excessive amount of water when cleaning would impair the final chemical resistances. It is important to rinse frequently and make sure clean water is used at all times, using appropriate trays and grills with cleaning rollers (wash-boy). If necessary, replace the sponge or felt cleaning pad when saturated with grout. Final cleaning should be done, by sponge applied in a diagonal directions to avoid material coming out from the joints. Then clean the coatings completely with a cotton cloth, absorbent paper or a wet vacuum to ensure complete removal of any residual streaks of resin. Avoid accumulations of water on the grout before it hardens. Any streaks can be removed using Fuga-Soap Eco specific soap, diluted 1 part to 3 in water at least 72 hours after grouting (at +23 °C). Leave to work on the surface for 10 - 15 min., then use a felt cleaning pad, rinse with water and wipe with a dry cloth, absorbent paper or a wet vacuum. do not walk on floors that are still damp as dirt could still stick to them.

As an adhesive: Fugalite Invisibile can be applied with a suitable toothed spreader to be chosen according to the size and type of mosaic. Using the smooth part of the spreader, apply a fine layer of product, pressing down onto the substrate in order to ensure maximum adhesion, after which the thickness can be adjusted as required by tilting the spreader at an angle. Apply the adhesive to a surface area that will allow laying of the coating material within the open time indicated. Press down the pieces of mosaic using a rubber coated spreader to allow for maximum coverage of the surface.

→ Cleaning
Residual traces of grout can be removed from tools with water before the product has hardened.

# Special notes

→ Adding Fuga-Wash Eco to the cleaning water gives a better detergent action on coating materials, keeps the sponge cleaner, improves the surface finish of grouting and cleans effectively without the need for rinsing.

# Certificates and marks

* *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).*
**The Italian Ceramic Center- Bologna (Centro Ceramico Bologna) has carried out a stain resistance test according to UNI EN ISO 10545-14 (Test Report no. 3686/11)

# Abstract

*Chemical and mechanical high-resistance grouting of ceramic tiles, porcelain tiles, glass mosaic using a certified, high-slide, easy-to-clean, photochromatic, vitreous grout that is bacteriostatic and fungistatic, water and stain proof with a high level of chemical and mechanical resistance and GreenBuilding Rating 3, such as Fugalite Invisibile by Kerakoll Spa*. Joints must be dry and free from traces of adhesive and loose debris. Use a spreader or hard rubber float to apply the grout and suitable sponges and clean water to clean joints on completion. Joints of ____ mm width and tiles ____ x ____ cm in size will give an average coverage of approx. ____ kg/m². Existing elastic expansion and fractionizing joints must be respected.*

** Tests carried out according to CSTB method, bacterial and fungal contamination*

| **Technical Data compliant with Kerakoll Quality Standard** | | |
|---|---|---|
| Appearance | part A neutral paste / part B straw-coloured liquid | |
| Specific weight | part A ≈ 1.69 kg/dm³ /<br>part B ≈ 0.99 kg/dm³ | UEAtc |
| Viscosity | ≈ 80200 mPa · s, rotor 93 RPM 10 | Brookfield method |
| Mineralogical nature of inert material | silicate - crystalline (part A) | |
| Chemical nature | epoxy resin (part A) / polyamines (part B) | |
| Grading | ≈ 63 – 200 µm | |
| Shelf life | ≈ 24 months from production in the original sealed packaging | |
| Warning | protect from frost, avoid direct exposure to sunlight and sources of heat | |
| Pack | monopack part A 2.82 kg / part B 0.18 kg | |
| Colour | Neutral | |
| Mixing ratio | part A : part B = 2.82 : 0.18 | |
| Specific weight of the mixture | ≈ 1,55 kg/dm³ | |
| Pot life at +23 °C | ≥ 45 min. | |
| Temperature range for application | from +5 °C to +30 °C | |
| joint width | from 0 to 3 mm | |
| Foot traffic | ≈ 24 hrs | |
| Grouting after laying: | | |
| - with Fugalite Invisibile on coating materials | immediate | |
| - with Fugalite Invisibile on floors | as soon as foot traffic is allowed | |
| - with adhesive | see characteristics of adhesive | |
| - mortar | ≈ 7 – 14 days | |
| Interval before normal use | ≈ 3 days (mechanical resistance) / ≈ 7 days (chemical resist.) | |
| Coverage: | | |
| - as an adhesive | ≈ 2 – 4 kg/m² | |
| - as a grout | see Coverage table | |

Values taken at +23 °C, 50% R.H. and no ventilation. Data may vary depending on specific conditions at the building site, i.e.temperature, ventilation and absorbency level of the substrate and of the materials laid.

## Coverage table

| | Format | Thickness | grammes/m² joint width | | |
|---|---|---|---|---|---|
| | | | 1 mm | 2 mm | 3 mm |
| Mosaic | 2x2 cm | 3 mm | ≈ 530 | ≈ 1.060 | ≈ 1590 |
| | 5x5 cm | 4 mm | ≈ 290 | ≈ 580 | ≈ 870 |
| Tiles | 30x60 cm | 4 mm | ≈ 40 | ≈ 80 | ≈ 120 |
| | 50x50 cm | 4 mm | ≈ 30 | ≈ 60 | ≈ 90 |
| | 60x60 cm | 4 mm | ≈ 25 | ≈ 50 | ≈ 75 |
| | 100x100 cm | 4 mm | ≈ 15 | ≈ 30 | ≈ 45 |
| | 20x20 cm | 8 mm | ≈ 150 | ≈ 300 | ≈ 450 |
| | 30x30 cm | 9 mm | ≈ 110 | ≈ 220 | ≈ 330 |
| | 40x40 cm | 10 mm | ≈ 90 | ≈ 180 | ≈ 270 |
| | 30x60 cm | 10 mm | ≈ 90 | ≈ 180 | ≈ 270 |
| | 60x60 cm | 10 mm | ≈ 60 | ≈ 120 | ≈ 180 |
| | 60x90 cm | 10 mm | ≈ 50 | ≈ 100 | ≈ 150 |
| | 100x100 cm | 10 mm | ≈ 35 | ≈ 70 | ≈ 105 |
| | 120x120 cm | 10 mm | ≈ 30 | ≈ 60 | ≈ 90 |
| | 20x20 cm | 14 mm | ≈ 260 | ≈ 520 | ≈ 780 |
| | 30x30 cm | 14 mm | ≈ 170 | ≈ 340 | ≈ 510 |
| Klinker | 30x30 cm | 15 mm | ≈ 185 | ≈ 370 | ≈ 555 |
| | 12,5x24,5 cm | 12 mm | ≈ 270 | ≈ 540 | ≈ 810 |

The data provided must be considered merely as an indication of the grout coverage, averaged out based on our experience and taking into account normal site wastage. The following may vary according to specific conditions at the building site: roughness of tile, excess of residual product, lack of surface flatness, temperatures, seasonal conditions.

| Performance | | |
|---|---|---|
| **VOC Indoor Air Quality (IAQ) - Volatile organic compound emissions** | | |
| Conformity | EC 1 Plus GEV-Emicode | GEV Certified 4450/11.01.02 |
| **HIGH-TECH** | | |
| Static modulus of elasticity | ≈ 570 N/mm² | ISO 178 |
| Resistance to abrasion | ≈ 215 mm³ | EN 12808-2 |
| Water absorption after 240 min. | ≈ 0,04 g | EN 12808-5 |
| Working temperature | from -40 °C to +80 °C | |
| Colour Fastness | 1 | UNI EN ISO 105-A05 |
| Resistance to fungal contamination | class F+ | CSTB 2011-002 |
| Resistance to bacterial contamination | class B+ | CSTB 2010-083 |
| Porcelain tiles/concrete tensile strength | ≥ 1,5 N/mm² | EN 1348 |
| Initial shear strength | ≥ 5 N/mm² | EN 12003 |
| Shear strength after water immersion | ≥ 3 N/mm² | EN 12003 |
| Open time: tensile adhesion | ≥ 2 N/mm² | EN 1346 |
| Resistance to iodine stains | class 4 | ISO 10545-14 |
| Resistance to olive oil stains | class 5 | ISO 10545-14 |
| Resistance to chromium stains | class 3 | ISO 10545-14 |

Values taken at +23 °C, 50% R.H. and no ventilation. Data may vary depending on specific conditions at the building site.

| Chemical resistance | | | |
|---|---|---|---|
| **Acids** | Concentration | Permanent contact | Occasional contact |
| Acetic | 2,50% | •• | ••• |
| | 5,00% | • | •• |
| | 10,00% | • | • |
| Hydrochloric | 37,00% | ••• | ••• |
| Citric | 10,00% | •• | ••• |
| Formic | 2,50% | •• | ••• |
| | 10,00% | • | • |
| Phosphoric | 50,00% | ••• | ••• |
| | 75,00% | • | •• |
| Lactic | 2,50% | •• | ••• |
| | 5,00% | • | •• |
| | 10,00% | • | • |
| Nitric | 25,00% | •• | ••• |
| | 50,00% | • | • |
| Oleic | 100,00% | • | • |
| Sulphuric | 50,00% | ••• | ••• |
| | 100,00% | • | • |
| Tannic | 10,00% | •• | ••• |
| Tartaric | 10,00% | •• | ••• |
| **Foodstuffs** | | Main foodstuffs (temporary contact) | |
| Vinegar | | •• | |
| Citrus fruits | | •• | |
| Ethyl alcohol | | ••• | |
| Beer | | ••• | |
| Butter | | ••• | |
| Coffee | | ••• | |
| Casein | | ••• | |
| Glucose | | ••• | |
| Animal fat | | ••• | |
| Fresh milk | | •• | |

Legend
••• Excellent
•• Good
• poor

Values taken at: - ambient +23 °C / 50% R.H. - chemical aggressive agent +23 °C

| **Chemical resistance** | | | |
|---|---|---|---|
| Malt | | ••• | |
| Margarine | | ••• | |
| Olive oil | | •• | |
| Soya oil | | •• | |
| Pectin | | ••• | |
| Tomato | | •• | |
| Yoghurt | | •• | |
| Sugar | | ••• | |
| **Fuels and Oils** | | Permanent contact | Occasional contact |
| Petrol | | • | ••• |
| Diesel oil | | •• | ••• |
| Coal tar oil | | •• | •• |
| Mineral oil | | •• | ••• |
| Petroleum | | •• | ••• |
| Mineral spirit | | • | ••• |
| Turpentine | | • | ••• |
| **Alkalis and Salts** | Concentration | Permanent contact | Occasional contact |
| Oxygenated water | 10,00% | •• | ••• |
| | 25,00% | • | ••• |
| Ammonia | 25,00% | ••• | ••• |
| Calcium chloride | Saturated Sol. | ••• | ••• |
| Sodium chloride | Saturated Sol. | ••• | ••• |
| Sodium hypochlorite | | | |
| (Active chlorine) | 1,50% | •• | ••• |
| | 13,00% | • | •• |
| Caustic soda | 50,00% | ••• | ••• |
| Aluminium sulphate | Saturated Sol. | ••• | ••• |
| Potassium hydroxide | 50,00% | ••• | ••• |
| Potassium permanganate | 5,00% | •• | ••• |
| | 10,00% | • | •• |

Legend
••• Excellent
•• Good
• poor

Values taken at: - ambient +23 °C / 50% R.H. - chemical aggressive agent +23 °C

| Chemical resistance | | |
|---|---|---|
| **Solvents** | Permanent contact | Occasional contact |
| acetone | • | • |
| Ethyl alcohol | •• | ••• |
| Benzol | • | •• |
| Chloroform | • | • |
| Methylene chloride | • | • |
| Ethylene glycol | ••• | ••• |
| Perchloroethylene | • | •• |
| Carbon tetrachloride | • | •• |
| Tetrahydrofuran | • | • |
| Toluol | • | •• |
| Trichloroethylene | • | • |
| Xylene | • | •• |

Legend
••• Excellent
•• Good
• poor

Values taken at: - ambient +23 °C / 50% R.H. - chemical aggressive agent +23 °C

| Chemical resistance | | |
|---|---|---|
| **Staining agents** | Time exposed to staining agent 24 hours: | Time exposed to staining agent 30 min |
| Red wine | 5 | 5 |
| Mineral oil | 5 | 5 |
| Tomato ketchup | 2 | 5 |
| Mascara | 3 | 5 |
| Coffee | 2 | 5 |
| Hair dye | 1 | 2 |

Legend
5 can be cleaned under a running hot tap while gently rubbing with a sponge
4 can be cleaned with a mild detergent while gently rubbing with a sponge
3 can be cleaned with a basic detergent while vigorously rubbing with a sponge
2 to clean, treat first with a solvent or aggressive acid or basic solution, then vigorously rub with a sponge
1 cannot be cleaned by any of the aforementioned methods

# Warning

→ Product for professional use
→ abide by any standards and national regulations
→ use at temperatures between +5 °C and +30 °C
→ use packs which have been stored for 2 – 3 days before use at +20 °C
→ respect the mixing ratio of 2.82 : 0.18. For partial mixing, weigh the two parts precisely
→ workability times may vary considerably, depending on ambient conditions and the temperature of the tiles
→ do not walk on floors that are still damp as dirt could still stick to them
→ do not lay on substrates subject to moisture rising or which are not completely dry
→ if necessary, ask for the safety data sheet
→ for any other issues, contact the Kerakoll Worldwide Global Service +39 0536 811 516 - globalservice@kerakoll.com



Kerakoll Spa
via dell'Artigianato 9
41049 Sassuolo - MO

+39 0536.816.511
info@kerakoll.com

www.kerakoll.com