

Fugalite® Eco

Certified, eco-friendly, vitrified, high-slide, easy-to-clean grout and adhesive, bacteriostatic and fungistatic, water and stain proof for joints of between 0 and 20 mm with a high level of chemical and mechanical resistance, guarantees the continuity of ceramic surfaces, ideal for use in GreenBuilding. With very low volatile organic compound emissions.

Fugalite® Eco is a liquid ceramic for the smooth, unbroken grouting of all ceramic and glass mosaic coverings. Available in 3 colour collections giving a total of 28 different colours and allowing unlimited creative potential and original combinations as well as a striking finish.



GREENBUILDING RATING®

Fugalite® Eco
 - Category: Organic Mineral Products
 - Class: Organic Mineral Grouts
 - Rating*: Eco 1

* Rating based on average colour formulations

Very low VOC emissions

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

PRODUCT STRENGTHS

- Internal floors and walls
- Suitable for porcelain tiles, ceramics, large formats, low thickness slabs and glass mosaic
- Vitrified, guarantees the lasting performance of ceramics and a totally even colour
- Vitrified, ideal to bond and grout glass mosaic
- Vitrified, complete colour uniformity
- Vitrified, impermeable to water, stains and dirt
- Vitrified, prevents the development of mould and bacteria
- Complies with HACCP/EC 852/2004 requirements for food hygiene

ECO NOTES

- The use of sand formed by natural processes allows substantial energy saving
- The extra-fine white colour contain micro glass beads made from recycled glass
- The bacteriostatic and fungistatic properties are obtained without using biocides

AREAS OF USE

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:

- porcelain tiles, low thickness slabs, ceramic tiles, klinker, cotto, glass and ceramic mosaic, of all types and formats
- 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, swimming pools, thermal water baths and fountains, heated floors, also in areas subject to thermal shock and freezing.

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 or on substrates that are not fully dry and subject to moisture rising.

** Centro Ceramico Bologna has passed the test for Resistance to stains following UNI EN ISO 10545-14 (Test Report N° 3685/11)

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 a 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 make 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 plasters which are highly absorbent and have dusty, flaky surfaces, it is advisable to apply one or more coats of Primer A Eco water-based, eco-friendly surface insulation, following the instructions provided, in order to reduce the water absorption and improve spreadability of the adhesive

Preparation

Fugalite® Eco 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 minutes at +23 °C, 50% RH. Fugalite® Eco product buckets must be stored at a temperature of approx. +20 °C for at least 2-3 days before 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 a grout: Fugalite® Eco must be applied evenly on the tile covering with a hard rubber spreader. Seal the entire surface by completely grout the joints, applying the grout diagonally to the tiles. 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. 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. Rinse the sponge frequently and make sure clean water is used at all times, use appropriate trays and grills with cleaning rollers. If necessary, replace the sponge or felt cleaning pad when saturated with grout. Finish cleaning up by dragging the sponge diagonally across the tiles to avoid going into the joints. Wipe the cleaned surface again with a dry cloth to make sure it is completely clean and there are no streaks of resin remaining. Once the grout has dried, any streaks can be removed using Fuga-Soap Eco, to be diluted in accordance with the working time and the amount of grout to be removed. Do not walk on floors that are still damp as dirt could still stick to them.

As an adhesive: Fugalite® Eco 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

Gold or silver Fuga-Glitter can be used as a additive in Fugalite® Eco to create a metalized decorative effect; add a 100 g tin to every bucket of grout to obtain a high quality aesthetic finish.

Addition of 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.

TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	part A coloured paste / part B straw-coloured liquid	
Specific weight	part A $\approx 1,69 \text{ kg/dm}^3$ / part B $\approx 0,99 \text{ kg/dm}^3$	UEAtc
Viscosity	$\approx 80,200 \text{ mPa} \cdot \text{s}$, 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	$\approx 0 - 250 \mu\text{m}$	
Shelf life	≈ 24 months in the original packaging	
Warning	Protect from frost, avoid direct exposure to sunlight and sources of heat	
Pack	single pack, Part A 2.82 kg / Part B 0.18 kg	
Mixing ratio	part A : part B = 2,82 : 0,18	
Specific weight of the mixture	$\approx 1,55 \text{ kg/dm}^3$	
Pot life at +23°C	≥ 45 min.	
Temperature range for application	from +5 °C to +30 °C	
Joint width:		
- Classic, Design and Colors	from 0 to 20 mm	
- Extra-fine white	from 0 to 5 mm	
Foot traffic	≈ 12 hrs	
Grouting after laying:		
- with Fugalite® Eco on coating materials	immediate	
- with Fugalite® Eco on floors	as soon as foot traffic is allowed	
- with adhesive	see characteristics of adhesive	
- mortar	$\approx 7 - 14$ days	
Interval before normal use	≈ 3 days mechanical resistance / ≈ 4 days chemical resistance	
Coverage:		
- as an adhesive	$\approx 2 - 4 \text{ kg/m}^2$	
- 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/m ² joint width			
			1 mm	2 mm	5 mm	10 mm
Mosaic	2x2 cm	3 mm	≈ 530	≈ 1.060	≈ 2.650	≈ 5.300
	5x5 cm	4 mm	≈ 290	≈ 580	≈ 1.450	≈ 2.900
Tiles	30x60 cm	4 mm	≈ 40	≈ 80	≈ 200	≈ 400
	50x50 cm	4 mm	≈ 30	≈ 60	≈ 150	≈ 300
	60x60 cm	4 mm	≈ 25	≈ 50	≈ 125	≈ 250
	100x100 cm	4 mm	≈ 15	≈ 30	≈ 75	≈ 150
	20x20 cm	8 mm	≈ 150	≈ 300	≈ 750	≈ 1.500
	30x30 cm	9 mm	≈ 110	≈ 220	≈ 550	≈ 1.100
	40x40 cm	10 mm	≈ 90	≈ 180	≈ 450	≈ 900
	30x60 cm	10 mm	≈ 90	≈ 180	≈ 450	≈ 900
	60x60 cm	10 mm	≈ 60	≈ 120	≈ 300	≈ 600
	60x90 cm	10 mm	≈ 50	≈ 100	≈ 250	≈ 500
	100x100 cm	10 mm	≈ 35	≈ 70	≈ 175	≈ 350
	120x120 cm	10 mm	≈ 30	≈ 60	≈ 150	≈ 300
	20x20 cm	14 mm	≈ 260	≈ 520	≈ 1.300	≈ 2.600
30x30 cm	14 mm	≈ 170	≈ 340	≈ 850	≈ 1.700	
Klinker	30x30 cm	15 mm	≈ 185	≈ 370	≈ 925	≈ 1.850
	12,5x24,5 cm	12 mm	≈ 270	≈ 540	≈ 1.350	≈ 2.700

PERFORMANCE

VOC INDOOR AIR QUALITY (IAQ) - VOLATILE ORGANIC COMPOUND EMISSIONS

Conformity EC 1-R plus GEV-Emicode GEV certified 2476/11.01.02

HIGH-TECH

static modulus of elasticity	≈ 570 N/mm ²	ISO 178
Resistance to abrasion	≈ 215 mm ³	EN 12808-2
Water absorption after 240 min.	≈ 0,04 g	EN 12808-5
Working temperature	from -40 °C to +110 °C	
Colour fastness according to UNI EN ISO 105-A05	see table	
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/mm ²	EN 1348
Initial shear strength	≥ 5 N/mm ²	EN 12003
Shear strength after water immersion	≥ 3 N/mm ²	EN 12003
Open time: tensile adhesion	≥ 2 N/mm ²	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 (EN 12808-1)

Acids	Concentration	Permanent contact	Occasional contact
Acetic	2,5%	••	•••
	5%	•	••
	10%	•	•
Hydrochloric	37%	•••	•••
Citric	10%	••	•••
Formic	2,5%	••	•••
	10%	•	•
Phosphoric	50%	•••	•••
	75%	•	••
Lactic	2,5%	••	•••
	5%	•	••
	10%	•	•
Nitric	25%	••	•••
	50%	•	•
Oleic	100%	•	•
Sulphuric	50%	•••	•••
	100%	•	•
Tannic	10%	••	•••
Tartaric	10%	••	•••

Legend ••• Excellent
 •• Good
 • poor

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

CHEMICAL RESISTANCE (EN 12808-1)

Foodstuffs		Main foodstuffs (temporary contact)	
Vinegar		••	
Citrus fruits		••	
Ethyl alcohol		•••	
Beer		•••	
Butter		•••	
Coffee		•••	
Casein		•••	
Glucose		•••	
Animal fat		•••	
Fresh milk		••	
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%	••	•••
	25%	•	•••
Ammonia	25%	•••	•••
Calcium chloride	Saturated Sol.	•••	•••
Sodium chloride	Saturated Sol.	•••	•••
Sodium hypochlorite (Active chlorine)	0,63%	••	•••
	13%	•	••
Caustic soda	50%	•••	•••
Aluminium sulphate	Saturated Sol.	•••	•••
Potassium hydroxide	50%	•••	•••
Potassium permanganate	5%	••	•••
	10%	•	••
Legend	•••	Excellent	
	••	Good	
	•	poor	
<i>Values taken at: - ambient +23 °C / 50% R.H. - chemical aggressive agent +23 °C</i>			

CHEMICAL RESISTANCE (EN 12808-1)

Solvents	Permanent contact	Occasional contact
Acetone	•	•
Ethyl alcohol	••	•••
Benzol	•	••
Chloroform	•	•
Methylene chloride	•	•
Ethylene glycol	•••	•••
Perchloroethylene	•	••
Carbon tetrachloride	•	••
Tetrahydrofuran	•	•
Toluol	•	••
Trichloroethylene	•	•
Xylene	•	••

Legenda ••• ottima
 •• buona
 • scarsa

Rilevazione dati: - ambiente +23 °C / 50% U.R. - aggressivo chimico +23 °C

RESISTENZA ALLE MACCHIE (ISO 10545-14)

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

COLOUR CHART

Fugalite® Eco colours		Colour Fastness* GSc (Daylight) EN ISO 105-A05 standard
Classic	01 White	1,5
	02 Light Grey	1
	03 Pearl Grey	1
	04 Iron Grey	1,5
	05 Anthracite	2
	06 Black	2,5
	07 Jasmin	1
	08 Bahama Beige	1
	09 Caramel	1,5
	10 Terracotta	2
	11 Brown	2,5
	12 Walnut	2,5
Design	51 Silver	1,5
	50 Pergamon	1,5
	46 Ivory	1
	45 Limestone	1
	52 Dove Grey	1,5
	44 Cement Grey	1
	48 Coffee	2,5
Colors	38 Husky	1
	47 Mediterranean	1
	15 Ocean	1
	41 Eucalyptus	1,5
	49 Moss	2
	20 Magnolia	1,5
	27 Sunset	1,5
	21 Red	4
	23 Yellow	1
	Extra-fine white	1

Legend

- from 5 to 4 high colour fastness; for internal and external use
- from 3.5 to 3 good colour fastness; for internal and external use
- from 2.5 to 1 limited colour fastness; for internal use

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 - globalservice@kerakoll.com

The Eco and Bio classifications refer to the GreenBuilding Rating® Manual 2013. This information was last updated in April 2013 (ref. GBR Data Report - 04.13); 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.