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

eco 1®

Regional Mineral ≥ 30 %	Low Emission IAQ VOC Indoor Air Quality	SLV REDUCED Solvent ≤ 5 g/kg	Low Ecological Impact	Health Care
	✓			
	Very low VOC emissions			

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

PRODUCT STRENGTHS

- Internal floors and walls
- Suitable for vitrified 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 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:
- vitrified 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.

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** 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 fixed correctly and are anchored perfectly to the surface. 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 surfaces, 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 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 surface 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 isolation primer, 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 min. at +23 °C, 50% R.H. 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 grout: Fugalite® Eco must be applied evenly on the tile covering with a hard rubber trowel. 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 trowel, 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. Wipe the cleaned surface again with a dry cloth to make sure it is completely clean and there are no stains of resin remaining. Once the grout has dried, any stain 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.

Application as an adhesive: Fugalite® Eco can be applied with a suitable toothed trowel, to be chosen according to the size and type of mosaic. Using the smooth part of the trowel, apply a fine layer of product, pressing down onto the surface in order to ensure maximum adhesion, after which the thickness can be adjusted as required by tilting the trowel at an angle . Apply the adhesive to a surface area that will allow fixing of the coating material within the open time indicated. Press down the pieces of mosaic using a rubber coated trowel 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 an additive in Fugalite® Eco to create a metalized decorative effect; add 1 – 3 tins to every 100 g pack of grout to obtain the required 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.

ABSTRACT

High chemical and mechanical resistance grouting of ceramic and vitrified tiles, glass mosaic using a certified, eco-friendly, high-slide, easy-to-clean, vitrified grout that is bacteriostatic and fungistatic, water and stain proof with a high level of chemical and mechanical resistance and GreenBuilding Rating® Eco 1, such as Fugalite® Eco by Kerakoll Spa. Joints must be dry and free from traces of adhesive and loose debris. Use a trowel 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.

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TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	part A coloured paste / part B straw-coloured liquid	
Specific weight	Part A ≈ 1,77 kg/dm3 / Part B ≈ 1,01 kg/dm3	UEAtc
Viscosity	≈ 100000 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	≈ 0 – 250 µm	
Shelf life	≈ 24 months in the original 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	
Mixing ratio	part A : part B = 2,82 : 0,18	
Specific weight of the mixture	≈ 1,43 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	from 0 to 10 mm	
Foot traffic	≈ 24 hrs	
Grouting after fixing:		
- 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	≈ 7 – 14 days	
Interval before normal use	≈ 3 days (mechanical resistance) / ≈ 7 days (chemical resist.)	
Coverage:		
- as an adhesive	≈ 2 – 4 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 surface and of the materials fixed .

COVERAGE TABLE

	Format	Thickness	grammes/m^2 joint width			
			1 mm	2 mm	5 mm	10 mm
Mosaic	25x25 mm	3 mm	≈ 395	≈ 790	≈ 1975	≈ 3950
	50x50 mm	4 mm	≈ 270	≈ 540	≈ 1350	≈ 2700
Natural stones, Glaze, Ceramic and Vitrified Tiles	100x100 mm	6 mm	≈ 205	≈ 410	≈ 1025	≈ 2050
	100x150 mm	6 mm	≈ 170	≈ 340	≈ 850	≈ 1700
	200x100 mm	6 mm	≈ 155	≈ 310	≈ 775	≈ 1550
	300x300 mm	7 mm	≈ 80	≈ 160	≈ 400	≈ 800
	300x450 mm	9 mm	≈ 85	≈ 170	≈ 425	≈ 850
	300x600 mm	9 mm	≈ 80	≈ 160	≈ 400	≈ 800
	600x600 mm	10 mm	≈ 60	≈ 120	≈ 300	≈ 600
	1000x1000 mm	12 mm	≈ 40	≈ 80	≈ 200	≈ 400
	1200x600 mm	16 mm	≈ 70	≈ 140	≈ 350	≈ 700
	1200x2400 mm	16 mm	≈ 35	≈ 70	≈ 175	≈ 350
	1800x900 mm	25 mm	≈ 70	≈ 140	≈ 350	≈ 700
	1800x1200 mm	25 mm	≈ 60	≈ 120	≈ 300	≈ 600

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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	≈ 410 N/mm²	ISO 178
Resistance to abrasion	≈ 174 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 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	≥ 2,5 N/mm²	EN 1348
Initial shear strength	≥ 4 N/mm²	EN 12003
Shear strength after water immersion	≥ 3 N/mm²	EN 12003
Open time: tensile adhesion	≥ 1,5 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
LEED®		
LEED® Points Contribution*	LEED® Points	
QI Credit 4.1 Low-Emitting Materials	up to 1	GBC Italia

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

** LEED® is an environmental performance measurement system designed for new and existing commercial, institutional, and residential buildings, based on energy and environmental principles commonly recognized and accepted by the international scientific community. The LEED® building sustainability assessment system is a voluntary system. To calculate the score, consult the rules provided by the Italy LEED® Manual (edition 2009). © 2010, Green Building Council Italy, U.S. Green Building Council, all rights reserved*

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

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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)	1,5%	•	•••
	13%	•	•
Caustic soda	50%	•••	•••
Aluminium sulphate	Saturated Sol.	•••	•••
Potassium hydroxide	50%	•••	•••
Potassium permanganate	5%	••	•••
	10%	•	••

Legend
••• Excellent
•• Good
• poor

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

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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	•	••

Legend
••• Excellent
•• Good
• poor

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

RESISTANCE TO STAINS (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

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COLOUR CHART

		Fugalite® Eco colours	Colour Fastness* GSc (Daylight) EN ISO 105-A05 standard
Classic	01 White		2
	02 Light Grey		2
	03 Pearl Grey		2,5
	04 Iron Grey		3
	05 Anthracite		2,5
	06 Black		2,5
	07 Jasmin		2,5
	08 Bahama Beige		3
	09 Caramel		3,5
	10 Terracotta		3,5
	11 Brown		3,5
	12 Walnut		2,5
Design	51 Silver		2,5
	50 Pergamon		2,5
	46 Ivory		2
	45 Limestone		2,5
	52 Dove Grey		2,5
	44 Cement Grey		2,5
	48 Coffee		3
Colors	38 Husky		2
	47 Mediterranean		2
	15 Ocean		2
	41 Eucalyptus		2
	49 Moss		2
	20 Magnolia		2,5
	27 Sunset		3
	21 Red		4,5
	23 Yellow		1

The hues shown are intended as an indication only.

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 fix 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 India Helpline (Toll Free) 1800-200-6550 - info@kerakollindia.com

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