Fugalite® Bio

Water-based hypo-allergenic resin for waterproof, stain-proof, silk-effect grouting of porcelain tiles, natural stones and glass mosaic.

Fugalite® Bio is dermatologically-tested, with the result as hypoallergenic according to a skin tolerance medical experiment conducted at the University of Modena and Reggio Emilia dermatological clinic. Available in 12 natural hues inspired by the collections mainly used for making contemporary ceramic coverings. Guarantees the aesthetic and functional continuity of grouted surfaces.

GREENBUILDING RATING®

Fugalite® Bio
- Category: Organic Mineral Products
- Class: Organic mineral grouts
- Rating*: Eco 3

* Rating based on average colour formulations

eco3	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	Reduced solvent content 2,4 g/kg		Non-toxic and non-hazardous

RATING SYSTEM ACCREDITED BY CERTIFICATION BODY SGS

PRODUCT STRENGTHS

- Resistent to UV rays
- Internal and external flooring and walls
- Water-resistant – Drop effect, water-resistant, non-absorbent and does not change colour
- Patented – International patent no. 1403659 from the 31/10/2013
- Bacteriostatic – CSTB-tested. Prevents the proliferation of bacteria and moulds
- Stain proof – Tested by the Italian Ceramic Center – Bologna (Centro Ceramico Bologna). Can be cleaned easily
- Complies with HACCP/EC 852/2004 requirements for food hygiene
- CATAS-tested for colour durability in external applications

ECO NOTES

- Water-based, limits the risk of loads that could be harmful and dangerous to the environment during storage and transportation

AREAS OF USE

Use
Water-resistant grouting of joints from 0 to 5 mm 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
- natural stone, recomposed materials, marble

Flooring and walls, for internal and external use, 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 joints more than 5 mm in width, 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.

* 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)

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INDICATED FOR USE AS GROUT

PREPARATION OF SUBSTRATES

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 make cleaning difficult. It is advisable to perform a preliminary test on tiles not to be laid or in a small, concealed area.

SHELF LIFE

Single 1.5 kg pack (part A 1 kg : part B 0.5 kg).
It is recommended that the packs be stored at +20 °C for two days prior to use; higher temperatures increase the hardening speed, while lower temperatures make the mix hard to lay and slow down setting.

PREPARATION

Mix 0.5 kg of component B with a spreader, pour it all into the bucket of component A, making sure that none of component B is left in the tin.
Mix the two components using a low-speed helicoidal agitator until a smooth, even coloured mixture is obtained.
Use a spreader or trowel to scrape the walls and bottom of the bucket of component A once component B has been poured into it, so that there are no areas of product that have not been properly mixed. Mixing by hand is not recommended. The mixture remains workable for approximately 45 min. (value calculated at +23 °C, R.H. 50%).

APPLICATION

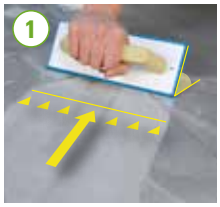
Fugalite® Bio must be applied evenly on the tile covering with a hard rubber spreader. Seal the entire surface by completely grout the joints, applying the grout diagonally to the tiles. If grouting is to be on joints only, it is recommended that a test be carried out in advance before laying to ensure the surface can be properly cleaned. Remove most of the excess grout immediately using the spreader, leaving only a thin film on the tile.

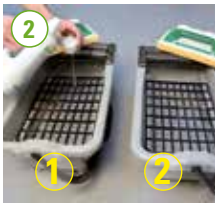
CLEANING

Preparation

1. **First cleaning with rubber spreader**: once the joints have been filled, remove any excess grout that is left on the tiles immediately with the rubber spreader (working diagonally).

2. **Addition of Fuga-Wash Eco to the cleaning water**.
   Recommended dosage: 1 measuring cap for every 5 litres of water. Use the tray ① to carry out the first cleaning pass with a cellulose sponge or abrasive felt pad, removing any excess grout from the flooring.
   Use tray ② to carry out the second and final cleaning pass, finishing and smoothing the grout in the joint. Change the washing water frequently so that it is always clean. Replace the sponge or felt if they become impregnated with product.





First pass

3. **Cleaning with cellulose sponge**: clean when the grout is still fresh, using a cellulose sponge dampened with the water from tray ①. Use circular movements to soften the film of grout on the tiles and finish the joints. Collect up the emulsion formed on the tiles using the sponge.

4. **Cleaning with abrasive felt pad for structured surfaces**: for more structured surfaces, clean when the grout is still fresh, using a felt pad dampened with the water from tray ①. Use circular movements to soften the film of grout on the tiles and finish the joints. Collect up the emulsion formed on the tiles using the sponge.

Second pass

5. **Finishing with a cellulose sponge**: finish cleaning with a cellulose sponge dampened with water from tray ②, working diagonally to the tiles so as not to dig into the joints. Do not walk on the damp floors for at least 12 - 24 hours, to avoid leaving dirt.

6. **Finishing with foam rubber sponge for a smoother joint**: for a smooth finish, complete cleaning with a foam rubber sponge dampened with water from tray ②, working diagonally to the tiles so as not to dig into the joints.

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INDICATED FOR USE AS GROUT

CLEANING ON THE FOLLOWING DAY

1. Once the grout has dried, any traces of dirt and streaks can be removed using **Fuga-Soap Eco**, to be diluted in accordance with the amount of grout to be removed and the curing time for Fugalite®.
   Recommended dosage: 2 - 3 parts water to 1 part Fuga-Soap Eco on the day after; undiluted after 3 days.
2. Distribute the product over the surface to be treated, using the abrasive felt pad and leaving a thin, even film of liquid. **Leave Fuga-Soap Eco to work for about 10/30 minutes**. After this, scrape the surface mechanically with abrasive felt pads.
3. Collect up the detergent solution with the sponge, rubber float or liquid vacuum system for large surfaces.
   Rinse thoroughly with clean water.
4. Dry immediately with a dry cloth or liquid vacuum system, without allowing the residual water to evaporate.

Repeat for highly stubborn dirt.

SPECIAL CLEANING

When the grout has hardened (after at least 7 days), any residue and stains can be removed using **Fuga-Shock Eco**.
Distribute the product undiluted over the surface to be treated, using the abrasive felt pad. Leave Fuga-Shock Eco to act for approximately 2 - 5 minutes, then carry out the same rinsing and drying operations indicated for cleaning on the day after application.

INDICATIONS FOR USE AS AN ADHESIVE FOR GLASS MOSAIC

PREPARATION OF SUBSTRATES

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 that are not perfectly anchored 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 isolation primer, following the instructions provided, in order to reduce the water absorption and improve spreadability of the adhesive.

APPLICATION

Fugalite® Bio 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

Fugalite® Bio improves product slide during application for use with low temperature coverings, or when the product itself has a low temperature, by diluting by up to 2% with clean water (about half a small coffee cup for each 1.5 kg pack).
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

Chemical and mechanical high-resistance grouting of ceramic tiles, porcelain tiles, glass mosaic, marble and natural stone is carried out using a patented and certified, eco-friendly, easy-to-work, hypoallergenic, water-based grout that is anti-bacterial and water and stain proof, for joints of between 0 and 5 mm with a high level of colour fastness and good chemical resistance, with GreenBuilding Rating® Eco 3, such as Fugalite® Bio 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.

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TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	part A coloured paste / part B neutral paste	
Specific weight	Part A ≈ 1.53 kg/dm³ / Part B ≈ 1.50 kg/dm³	
Viscosity	≈ 120000 mPa · s, rotor 93 RPM 10	Brookfield method
Mineralogical nature of inert material	silicate - crystalline	
Chemical nature	epoxy resin (part A) / polyamines (part B)	
Grading	≈ 0 - 250 µm	
Shelf life	≈ 18 months in the original packaging	
Warning	Protect from frost, avoid direct exposure to sunlight and sources of heat	
Pack	Part A bucket 1 kg / Part B bucket 0,5 kg	
	Part A: 2 kg bucket / Part B: 1 kg bucket	
Mixing ratio	Part A : Part B = 1 : 0,5	
Specific weight of the mixture	≈ 1,512 kg/dm³	
Pot life at +23 °C	≥ 45 min.	
Temperature range for application	from +5 °C to +30 °C	
Width of joints	from 0 to 5 mm	
Foot traffic:	≈ 24 hrs	
Grouting after laying:		
- with Fugalite® Bio on coating materials	immediate	
- with Fugalite® Bio 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 resistance	
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	5 mm	10 mm
Mosaic	2x2 cm	3 mm	≈ 560	≈ 1.120	≈ 2.800	≈ 5600
	5x5 cm	4 mm	≈ 305	≈ 610	≈ 1.525	≈ 3050
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	≈ 160	≈ 320	≈ 800	≈ 1600
	30x30 cm	9 mm	≈ 115	≈ 230	≈ 575	≈ 1150
	40x40 cm	10 mm	≈ 95	≈ 190	≈ 475	≈ 950
	30x60 cm	10 mm	≈ 95	≈ 190	≈ 475	≈ 950
	60x60 cm	10 mm	≈ 65	≈ 130	≈ 325	≈ 650
	60x90 cm	10 mm	≈ 55	≈ 110	≈ 275	≈ 550
	100x100 cm	10 mm	≈ 40	≈ 80	≈ 200	≈ 400
	120x120 cm	10 mm	≈ 30	≈ 60	≈ 150	≈ 300
	20x20 cm	14 mm	≈ 270	≈ 540	≈ 1.350	≈ 2700
	30x30 cm	14 mm	≈ 180	≈ 360	≈ 900	≈ 1800
Klinker	30x30 cm	15 mm	≈ 195	≈ 390	≈ 975	≈ 1950
	12,5x24,5 cm	12 mm	≈ 280	≈ 560	≈ 1.400	≈ 2800

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PERFORMANCE

VOC INDOOR AIR QUALITY (IAQ) - VOLATILE ORGANIC COMPOUND EMISSIONS		
Conformity	EC 1 plus GEV-Emicode	GEV certified 2758/11.01.02
CE MED MARK		
Obtained with a quantity of Fugalite® Bio:		
- maximum density per area	1475 g/m²	
- thickness when used as an adhesive	0,9 ± 0,1 mm	
- thickness when used as a grout	3,9 ± 0,1 mm	
HIGH-TECH		
Static modulus of elasticity	≈ 1230 MPa	ISO 178
Resistance to abrasion	≈ 203 mm³	EN 12808-2
Water absorption after 240 min.	≈ 0,06 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 bacterial contamination	class B+	CSTB 2010-081
Porcelain tiles/concrete tensile strength	≥ 2,5 N/mm²	EN 1348
Initial shear strength	≥ 5 N/mm²	EN 12003
Shear strength after water immersion	≥ 5 N/mm²	EN 12003
Shear strength after thermal shock	≥ 2 N/mm²	EN 12003
Open time: tensile adhesion	≥ 3 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 (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
N.B. N.B Values taken only of mechanical resistance after chemical attack.

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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
N.B. N.B Values taken only of mechanical resistance after chemical attack.

RESISTANCE TO STAINS (ISO 10545-14)

Staining agents	Time exposed to staining agent: 24 hours	Time exposed to staining agent: 30 min.
Red wine	3	3
Mineral oil	5	5
Tomato ketchup	2	5
Mascara	5	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® Bio colours	Colour Fastness* GS_C (Daylight) EN ISO 105-A05 standard
Classic	01 White		4
	02 Light Grey		4
	03 Pearl Grey		4
	04 Iron Grey		4,5
	05 Anthracite		4,5
	06 Black		4,5
	07 Jasmin		3,5
	08 Bahama Beige		4
	12 Walnut		4,5
Design	51 Silver		4
	46 Ivory		3,5
Colors	15 Ocean		3,5

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

The hues shown are intended as an indication only.

WARNING

- **Product for professional use**
- 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 : 1. 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

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