

Fugalite® Bio

Water-based hypoallergenic resin for waterproof, stain-proof, silk-effect grouting of vitrified 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 shades 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

	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

- Resistant 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:

- vitrified 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.

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)

INSTRUCTIONS FOR USE AS GROUT

PREPARATION OF SUBSTRATES

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 site dirt; any residual protective coatings must first be removed using specific products.

Before grouting joints, check if the tile surface can be properly cleaned, 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

1,5 kg monopack (part A 1 kg : part B 0,5 kg).

It is recommended that the packs are 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 trowel, 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.

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 surface with a hard rubber trowel. Grout material has to be completely filled between entire joint areas, the application has to be done diagonally with respect to the joints. Remove most of the excess grout immediately using the trowel, leaving only a thin film on the tile.

CLEANING

Preparation

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

② **Cleaning:** prepare the tray with clean water. Change the washing water frequently so that it is always clean. Replace the sponge or felt if impregnated with the 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 ②. 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 scrubbling pad for rough surfaces:** for more rough surfaces, clean when the grout is still fresh, using a scrubbling pad dampened with the water from tray ②. 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. Cleaning action has to be always diagonally to the tile joints, to avoid any material been removed from the joints itself. Do not walk on the damp floors for at least 12 - 24 hours, to avoid leaving dirt.

⑥ **Finishing with smooth sponge for a smoother joint:** for a smooth finish, complete cleaning with a smooth sponge dampened with water from tray ②. Cleaning action has to be always diagonally to the tile joints, to avoid any material been removed from the joints itself.



INSTRUCTIONS FOR REMOVING GROUT TRACES

CLEANING ON THE FOLLOWING DAY

- 1 Once the grout has dried, any traces of dirt and stains 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: 1 : 2 or 1 : 3 ratio; 1 part of Fuga-Soap Eco and 2 or 3 parts of water.
- 2 Apply the mix over the entire surface to be treated with rough scrubbing pad and leaving a thin, even film of liquid. **Leave Fuga-Soap Eco to work for about 10/30 minutes.** After this, scrap the surface manually with scrubbing pad.
- 3 Remove the detergent mix with sponge, or vacuum system for large surface areas. 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 scrubbing pad. Leave Fuga-Shock Eco to act for approximately 2 - 5 minutes, then follow the same cleaning instruction, as indicated above.



INSTRUCTIONS FOR USE AS 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 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 wet the surface.

APPLICATION

Fugalite® Bio 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

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.

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.

TECHNICAL DATA COMPLIANT WITH KERAKOLL QUALITY STANDARD

Appearance	part A coloured paste / part B neutral paste
Specific weight	Part A $\approx 1.53 \text{ kg/dm}^3$ / Part B $\approx 1.50 \text{ kg/dm}^3$
Viscosity	$\approx 120000 \text{ mPa} \cdot \text{s}$, rotor 93 RPM 10 Brookfield method
Mineralogical nature of inert material	silicate - crystalline
Chemical nature	epoxy resin (part A) / polyamines (part B)
Grading	$\approx 0 - 250 \mu\text{m}$
Shelf life	≈ 18 months in the original packaging
Warning	Protect from frost, avoid direct exposure to sunlight and sources of heat
Pack	Part A 1 kg bucket / Part B 0,5 kg bucket
Mixing ratio	Part A : Part B = 1 : 0,5
Specific weight of the mixture	$\approx 1,512 \text{ kg/dm}^3$
Pot life at +23 °C	$\geq 45 \text{ min.}$
Temperature range for application	from +5 °C to +30 °C
Width of joints	from 0 to 5 mm
Foot traffic:	$\approx 24 \text{ hrs}$
Grouting after fixing:	
- 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	$\approx 7 - 14$ days
Interval before normal use	≈ 3 days (mechanical resistance) / ≈ 7 days (chemical resist.)
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 absorbcency level of the substrate and of the materials laid.

COVERAGE TABLE

	Format	Thickness	grammes/m ² joint width		
			1 mm	2 mm	5 mm
Mosaic	25x25 mm	3 mm	≈ 420	≈ 840	≈ 2100
	50x50 mm	4 mm	≈ 290	≈ 580	≈ 1450
Natural stones, Glaze, Ceramic and Vitrified Tiles	100x100 mm	6 mm	≈ 220	≈ 440	≈ 1100
	100x150 mm	6 mm	≈ 180	≈ 360	≈ 900
	200x100 mm	6 mm	≈ 160	≈ 320	≈ 800
	300x300 mm	7 mm	≈ 80	≈ 160	≈ 400
	300x450 mm	9 mm	≈ 90	≈ 180	≈ 450
	300x600 mm	9 mm	≈ 80	≈ 160	≈ 400
	600x600 mm	10 mm	≈ 60	≈ 120	≈ 300
	1000x1000 mm	12 mm	≈ 45	≈ 90	≈ 225
	1200x600 mm	16 mm	≈ 70	≈ 140	≈ 350
	1200x2400 mm	16 mm	≈ 35	≈ 70	≈ 175
1800x900 mm	25 mm	≈ 75	≈ 150	≈ 375	
1800x1200 mm	25 mm	≈ 65	≈ 130	≈ 325	

PERFORMANCE

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

Conformity EC 1 plus GEV-Emicode GEV cert. 2758/11.01.02

CE MED MARK

Obtained with a quantity of Fugalite® Bio:

- maximum density per area	1475 g/m ²
- 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 mm ³	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/mm ²	EN 1348
Initial shear strength	≥ 5 N/mm ²	EN 12003
Shear strength after water immersion	≥ 5 N/mm ²	EN 12003
Shear strength after thermal shock	≥ 2 N/mm ²	EN 12003
Open time: tensile adhesion	≥ 3 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
 N.B. Values taken only of mechanical resistance after chemical attack.

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

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. Values taken only of mechanical resistance after chemical attack.*

RESISTANCE TO STAINS (ISO 10545-14)

Staining agents	Time exposed to staining agent:	Time exposed to staining agent:
	24 hours	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

COLOUR CHART

Fugalite® Bio colours		Colour Fastness* GSc (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
46 Ivory		3,5
Colours	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 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 - globalservice@kerakoll.com

The Eco and Bio classifications refer to the GreenBuilding Rating® Manual 2012. This information was last updated in November 2015 (ref. GBR Data Report - 10.15); 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.