Grouts

EpoxyElite EVO

TWO-COMPONENT ACID-RESISTANT EPOXY GROUT FOR INSTALLATION AND GROUTING OF CERAMIC, PORCELAIN AND MOSAIC TILES WITH JOINTS FROM 1 TO 15 mm (0.039 TO 0.59in) WIDE. FOR INTERIORS AND EXTERIORS. SUITABLE FOR UNDERFLOOR HEATING. PRODUCT WITH VERY LOW VOLATILE ORGANIC COMPOUND EMISSION RATE.

RG EN 13888 · R2T EN 12004 · ISO 13007 · Émissions dans l'air intérieur A+ · EMICODE EC1 PLUS very low emission · ZERORISK EVOLUTION TECHNOLOGY · UL CERTIFIED

DESCRIPTION

Two-component acid-resistant epoxy grout.
Part A consists in a mix of epoxy resin, selected inert fillers with fine granulometry, pigments and specific organic additives.
Component B consists in an innovative organic catalyst with lower exposure risks for users.
Once mixed together, the two components form a creamy and fluid mix, which is also suitable for vertical application with no dripping.
Once set, the product reaches very high performance levels in terms of mechanical strength and chemical resistance.

ADVANTAGES / FEATURES

- Unlike other epoxy grouts on the market, the catalyst (Part B) is labeled only as an irritant
- It is neither corrosive nor hazardous for the environment
- The user can therefore rely on a very safe product to work with
- The fine granulometry of the aggregates gives the grout a particularly smooth and compact surface with a high aesthetic impact and minimum dirt pick-up
- Color range including traditional shades in line with the current trends of the ceramic sector
- Stable and consistent colors
- Product exempt from restrictions for road, sea, air and rail transport
- Product with high mechanical strength, practically zero water absorption and high chemical resistance
- Suitable for interior and exterior floor and wall applications, even in severe operating conditions
- The product does not contain cement, thus avoiding the formation of efflorescence typical of cementitious products
- Bacteriostatic product which prevents the spread of fungi and molds
- Product with very low volatile organic compound (VOC) emission rate. Complies with class EC1^{PLUS} according to the EMICODE protocol and class A+ (Émission dans l'air intérieur - French Regulations)

PACKAGING

5 kg (11lb) buckets (A + B) - 500 kg (1.102.3lb) standard pallet
10 kg (22lb) buckets (A + B) - 440 kg (970lb) standard pallet

INTENDED USE

Intended uses
Interiors - exteriors
Floors and walls
Underfloor heating
Facades
Overlaying
Terraces and balconies
Residential, public, commercial building
Indoor wet areas (bathrooms, shower enclosures)
Tanks, swimming pools, fountains
SPAS and Turkish baths
Industrial floors
Dairy factories, slaughterhouses, food industry

Suitable materials
Ceramic and porcelain tiles
Single fired
Double fired
Terracotta - Clinker
Marble – Granite – Stone
Natural stones
Porcelain stoneware
Ceramic and vitreous mosaics
Thin laminated stoneware slabs
Large sizes
Slabs 320x160 cm (125.9 x 62.9in)
Recomposed stone made with resin or cement

FIELDS OF

Typical applications include:

APPLICATION

Suitable for the installation and acid-resistant grouting of ceramic, porcelain and mosaic tiles with joints between 1 and 15 mm (0.039 and 0.59in) wide, on interior and exterior walls and floors.
Suitable for applications where the surfaces are exposed to aggressive chemical substances (see chemical resistance table) such as dairy factories, abattoirs, pubs, food factories in general.
Suitable for applications with severe operating conditions such as swimming pools, Turkish baths, Jacuzzis, floors subject to heavy traffic, and tiles exposed to extreme temperature fluctuations.
Grouting of ceramic and porcelain tiles and mosaics on kitchen worktops in wood.
Bonding and grouting of ceramic, porcelain and mosaic tiles in swimming pools, including surfaces waterproofed with Elastocem, Coverflex or Aquamaster.
Grouting of ceramic and porcelain tiles, mosaics and natural stones installed on metal surfaces for the construction of prefabricated bathrooms.
Also recommended for grouting swimming pools or tanks containing salt or thermal water.

Contact with foodstuffs:

Product suitable for direct contact with foodstuffs according to the following EC legislation: Regulation 1935/2004/EC, Regulation (EU) 2018/213, Regulation 1985/2005/EC, Directive 2002/72/EC and subsequent amendments and modifications and under the following Italian legislation: Ministerial Decree 21/03/1973 and subsequent amendments and modifications, Presidential Decree 777/82 and subsequent amendments and modifications.
A copy of the certificate may be requested from the Litokol technical department.
The product can therefore be used to grout ceramic and porcelain tiles in food-grade environments, e.g. worktops for handling meat, dairy products or flour, tanks for breeding fish, kitchen counter tops in restaurants, fried-food stalls, bakeries, etc.

INSTALLATION PLANNING

The only way to guarantee the long-lasting performance of ceramic and porcelain tile installations is to properly plan the process. It is therefore advisable to consult the national regulations in force in each country, for example standard UNI 11493 in Italy, which provides all necessary instructions regarding the choice of materials, correct planning, use and installation, so as to ensure all quality, performance and durability standards are safely met.

Some of the general precautions that need to be followed are listed below as an example.

Substrates

Before installation, check that substrates are clean, free of loose fragments, properly dried and cured, flat and level, and that mechanical strength requirements based on the intended use have been met.

Worksite conditions

Check the suitability of the temperature, humidity, light conditions etc. at the time of the product's application.

Materials

Check that all materials used for tiling (ceramic materials, leveling systems, adhesives, grouts, waterproofing products, etc.) are suitable for the intended use and have been correctly stored.

Expansion joints

Check that the perimeter, expansion, divider and structural elastic joints have been correctly designed and prepared. Divider joints are normally needed for 20/25 m^2 (21.9/27.3yd^2) indoor sections, and 9-15m^2 (9.84/16.4yd^2) outdoor sections. For exteriors, make sure joints are properly waterproofed and sealed.

Back-buttering

For exterior installations, large tiles, floors with intense or heavy traffic, vibrating supports and situations exposed to high temperature fluctuations, the adhesive mortar must be applied to both the substrate and the back of the tiles so as to obtain a solid bed of adhesive without any air bubbles.

Joints

In any type of ceramic and porcelain tiling, suitably sized joints must be created based on the following parameters:

- Type, format and size tolerance of tiles
- thermal expansion coefficients of tiling materials
- mechanical properties of installation materials
- position and trajectory of joints
- mechanical features of substrate
- Ambiente di destinazione e condizioni di esercizio previste

La posa a giunto unito non è ammessa. Eventuali distanziatori in plastica vanno rimossi prima della stuccatura.

PRELIMINARY CHECKS

Use as sealant

Check that the adhesive or mortar used for tile bonding is completely set and dry.
The joints must be clean, free from dust and empty for the entire depth of the tiles.
Any traces of adhesive or mortar spilled back into the joints must be removed.
Make sure that the ceramic and porcelain tiles can easily be cleaned and their surface is not absorbent. Certain types of tiles (e.g., polished porcelain stoneware) or natural stones have micro-porosities and surface roughness that can cause surface staining and make cleaning very difficult.
Spot tests should always be performed.

Use as adhesive

The substrates must be clean, solid, compact, crack-free, properly cured and without rising damp.
If the substrate is not perfectly flat or the level is incorrect, it can be evened before installation using suitable leveling or self-leveling products, for example Litoliv S40 Eco, Litoliv Extra 15, Litoliv Express or Litoplan Smart.

MIX RATIO

Component A 93.7 parts by weight.
Component B: 6.3 parts by weight
The two components are pre-batched in their respective packaging.

PREPARING THE MIX

Cut off a corner of the bag containing the catalyst (component B) in the small bucket, and pour it onto component A (paste).
The entire contents of the bag should be emptied out by rolling it up and gradually pressing the bag from the sealed side towards the side that has been cut.
Mix, preferably using an electric drill with mixing paddle at low speed (≈ 300/min.) until a consistent mix is obtained without lumps.
Scrape the sides and the bottom of the container, using a steel trowel, to make sure that all the parts of the product are catalyzed.
Hand mixing is not recommended.
The two components are pre-batched in their packaging, thus preventing mixing errors.
The mix has a pot life of approximately 60 minutes at a temperature of about +23°C (73.4°F).

APPLICATION

Use as sealant
Apply the mix in the joints using a special rubber float until saturation, making diagonal movements with respect to the direction of the joints and removing any excess material from the surface of the ceramic covering.
For large surfaces, a single disc machine with abrasion-resistant rubber brusher can be used.
The product's pot life and setting time is strongly dependent on the ambient temperature.
Low temperatures will lengthen the setting time, high temperatures will shorten it.
The ideal temperature for application is between +18 (64.4°F) and +23°C (73.4°F).
At temperatures less than +10°C (50°F), the product is very dense and difficult to apply. The setting time is also considerably lengthened.
Do not add water or solvents to improve pot life.
In hot weather, it is advisable to spread the product on the flooring as quickly as possible so as not to shorten the pot life even further due to the heat of reaction in the container.
Do not use if the temperature is forecast to drop below +10°C (50°F) in the following 24 hours.
At a temperature of +15°C (59°F), 3 days are required to set to light foot traffic and 10 days until it is ready for use.
Use as adhesive
Spread the mix onto the substrate using the smooth part of the trowel to create a layer approximately 1 mm thick (0.039in). Immediately afterwards, apply the product using the notched part of the trowel.
In exterior installations or areas subject to high stress, the adhesive should also be applied to the back of the slabs (back-buttering method).
The trowel notch size will depend on the size of the tiles.
The tiles must be laid on the adhesive when fresh, firmly pressed to ensure good contact.
The joints can be grouted after about 24 hours.
At normal temperature and humidity conditions, the product has a pot life of approximately 1 hour.
Take account of any expansion, perimeter, divider or structural joints.
In the case of mosaics mounted on adhesive paper or film, this must be removed at least 24 hours after installation once the adhesive has sufficiently set, to prevent the detachment of the tiles.

CLEANING AND FINISHING

The grouting must be cleaned and finished while the product is still wet and in any case in the shortest possible time.
Take care not to empty the joints or leave halos on the tile surface.
Cleaning and finishing can be performed either manually or using a single disc machine with felt disc pad.
Manual method
First sprinkle clean water over the grouted surface.
If necessary, perform initial cleaning using a float fitted with a moistened white felt pad (art. 109 GBNC). Make circular movements in both clockwise and anti-clockwise directions in order to seal the sides of the tiles perfectly and to remove excess grout from the surface of the tiles.
Then wipe a second time with a Sweepex sponge (art. 128G0001) in order to obtain a smooth, closed surface and to remove the product completely from the surface of the tiles, without removing it from the joints, as well as to dry off the excess water. To facilitate the cleaning operation, we recommend using two buckets full of water, one for rinsing the felt pad and sponge, as well as to collect any dirty water, and the other filled with clean water for the final surface cleaning.
Replace the felt pad and sponge when they become impregnated with resin and can no longer be cleaned.
Any halos or clear product residue can be removed from the surface of the tiles after about 24 hours or after the joint

has set (depending on the temperature), using the special detergents Litonet EVO (for floors) and Litonet Gel EVO (for walls).
Refer to the technical data sheet for information on how to used them correctly.

Method with single disc machine

After removing any excess grout from the surface, sprinkle plenty of clean water over the grouted surface.
Then start cleaning with the single disc machine with white felt disc pad.
Replace the felt pad when it is completely impregnated with the product.
If necessary, the Litonet EVO detergent can be used to remove any halos after 24 hours, or in any case after the grout sets (depending on the temperature).

WARNINGS

- Spread the product at temperatures between +10°C (50 °F) and +30°C (86 °F) inclusive
- Before application, make sure that the adhesive used to install the ceramics or mosaics has completely dried
- Change the cleaning water frequently
- Change the felt pad and sponge when they are impregnated with product
- Do not use aggressive detergents during the first 5 days of the grout curing time
- Respect the mix ratio
- Do not use the product on damp surfaces or surfaces subject to rising damp
- Do not use the product for widths greater than 15 mm (0.59in)
- Do not add lime, cement or other foreign materials to the product
- Do not walk on the newly grouted surface to avoid staining the floor with epoxy resin
- Do not cover the freshly grouted surface with sheets or other materials to avoid the formation of condensate, which could cause problems in the resin cross-linking. Wait at least 48-72 hours, depending on the temperature, before protecting the surface with breathable materials
- The product cannot be used for grouting Tuscan terracotta tiles or other porous materials and articles, such as cement curbing
- The product cannot be used to grout tanks containing aggressive substances for which only occasional contact is allowed (see chemical resistance table)
- Before grouting natural stones, a spot test must be carried out in order to check for any absorption of the epoxy resin by the stone slabs
- In these cases, it is advisable to perform a spot test and in any case, avoid using grouts with contrasting or very dark colors
- Certain types of tiles (e.g., polished porcelain stoneware) or natural stones, have micro-porosities and surface roughness that can cause surface staining and make cleaning very difficult.
- Given the many types of tiles and mosaics available on the market today, in case of doubt it is recommended to perform a spot grout test in order to determine any incompatibility or cleaning difficulties
- Avoid any dust or polluting materials generated by concomitant processes, from coming into contact with the grouting before it has set
- Promptly remove any excess product from the surface of the tiles insofar as the product, once set, can only be mechanically removed, posing serious risks to the end result
- Do not use the product for applications not stated in this technical sheet
- In casi dubbi consultare l'Ufficio di assistenza tecnica Litokol S.p.A.

SAFETY INFORMATION

Consult the product safety data sheet, available on request.
PRODUCT FOR PROFESSIONAL USE

ITEM SPECIFICATION

#The installation and acid-resistant grouting of ceramic, porcelain and mosaic tiles with joints between 1 and 15 mm (0.039 and 0.59 in) wide must be carried out with a two-component colored epoxy grout in class RG according to EN 13888 and class R2T according to EN 12004, such as EpoxyÉlite EVO by Litokol S.p.A.

IDENTIFICATION DATA

Appearance	Component A: colored paste
Appearance	Component B: thick liquid
Color	See color chart
Customs code	35069190
Shelf life	24 months in original packaging in a dry place. Protect against frost.

APPLICATION DATA

Mix ratio	Component A: 93.7 parts by weight
Mix ratio	Component B: 6.3 parts by weight
Consistency of mix	Thixotropic paste
Specific gravity of mix	1.60 kg/dm^3 (3.53lb/in^3)
Pot life	Approx. 60 minutes
Joint width	From 1 to 15 mm (From 0.039 to 0.59in)
Application	Grout rubber float
Application temperatures	From +10°C to +30°C (+50°F to +86°F)
Recommended application temperatures	From +18°C to +23°C (+64.4°F to +73.4°F)
Waiting time for grouting	24 hours
Set to light foot traffic	24 hours
Ready for use	7 days - Pools 7 days
Temperature of use	From -20°C to +100°C (-4°F to +212°F)
How to clean equipment	With water when product is fresh. Mechanically when product has set.

PERFORMANCE

Compliance	EN 13888 – ISO 13007	RG
Resistance to abrasion	≤ 250 mm^3 (≤ 9.84in^3)	EN 12808-2
Compressive strength after 28 days	≥ 45.0 N/mm^2 (10.11lbf/in^2)	EN 12808-3
Flexural strength after 28 days	≥ 30 N/mm^2 (6.74lbf/in^2)	EN 12808-3
Shrinkage	≤ 1.5 mm/m (≤ 0.059in/yd)	EN 12808-4
Water absorption after 240 minutes	≤ 0.1 g (0.0035oz)	EN 12808-5

PERFORMANCE

Compliance	EN 12004 – ISO 13007	R2 T
Initial shear adhesion strength	≥ 2.0 N/mm^2 (0.45lbf/in^2)	EN 12003
Shear adhesion strength after immersion in water	≥ 2.0 N/mm^2 (0.45lbf/in^2)	EN 12003
Shear adhesion strength after thermal shock	≥ 2.0 N/mm^2 (0.45lbf/in^2)	EN 12003
Open time	≥ 0.5 N/mm^2 (0.11lbf/in^2) after 20 minutes	EN 1346
Slip	≤ 0.5 mm (≤ 0.020in)	EN 1308
Chemical resistance	See Table	EN 12808-1

CONSUMPTION TABLES

CONSUMPTION AS GROUT kg/m^2 (lb/yd^2)

Length	Width	Thickness	Joints (mm) (in)						
A (mm) (in)	B (mm) (in)	C (mm) (in)	1	2	3	4	5	7	10
10	10	4	1.24	2.48	3.72				
10	10	10	3.1	6.2	9.3				
15	15	4	0.83	1.65	2.48				
15	15	10	2.07	4.13	6.2				
15	30	8	1.24	2.48	3.72				
20	20	4	0.62	1.24	1.86				
23	23	8	1.08	2.16	3.23				
25	25	10	1.24	2.48	3.72				
50	50	4	0.25	0.5	0.74				
50	50	10	0.62	1.24	1.86				
100	100	8	0.25	0.5	0.74	0.99	1.24	1.74	2.48
125	240	12	0.23	0.45	0.68	0.91	1.13	1.58	2.26
150	150	6	0.12	0.25	0.37	0.5	0.62	0.87	1.24
150	150	8	0.17	0.33	0.5	0.66	0.83	1.16	1.65
200	200	8	0.12	0.25	0.37	0.5	0.62	0.87	1.24
300	300	8	0.08	0.17	0.25	0.33	0.41	0.58	0.83
300	600	10	0.08	0.16	0.23	0.31	0.39	0.54	0.78
400	400	10	0.08	0.16	0.23	0.31	0.39	0.54	0.78
450	450	10	0.07	0.14	0.21	0.28	0.34	0.48	0.69
600	600	10	0.05	0.1	0.16	0.21	0.26	0.36	0.52
300	300	14	0.14	0.29	0.43	0.58	0.72	1.01	1.45
135	800	10	0.13	0.27	0.4	0.54	0.67	0.94	1.34
200	800	10	0.1	0.19	0.29	0.39	0.48	0.68	0.97
400	800	10	0.06	0.12	0.17	0.23	0.29	0.41	0.58
110	900	10	0.16	0.32	0.47	0.63	0.79	1.11	1.58
150	900	10	0.12	0.24	0.36	0.48	0.6	0.84	1.21
225	900	10	0.09	0.17	0.26	0.34	0.43	0.6	0.86
300	900	10	0.07	0.14	0.21	0.28	0.34	0.48	0.69
600	900	10	0.04	0.09	0.13	0.17	0.22	0.3	0.43
500	1000	3.5	0.02	0.03	0.05	0.07	0.08	0.11	0.16
1000	1000	3.5	0.01	0.02	0.03	0.04	0.05	0.08	0.11
1000	3000	3.5	0.01	0.01	0.02	0.03	0.04	0.05	0.07
100	1200	10	0.17	0.34	0.5	0.67	0.84	1.18	1.68
200	1200	10	0.09	0.18	0.27	0.36	0.45	0.63	0.9
300	1200	10	0.06	0.13	0.19	0.26	0.32	0.45	0.65
600	1200	10	0.04	0.08	0.12	0.16	0.19	0.27	0.39
300	1200	6	0.04	0.08	0.12	0.16	0.19	0.27	0.39
600	1200	6	0.02	0.05	0.07	0.09	0.12	0.16	0.23
1200	1200	6	0.02	0.03	0.05	0.06	0.08	0.11	0.16
1200	2400	6	0.01	0.02	0.03	0.05	0.06	0.08	0.12

CALCULATION OF CONSUMPTION

FORMULA FOR CALCULATION OF CONSUMPTION: (A+B)/(AxB) x C x D x 1.55 = kg/m^2 (lb/yd^2)

A = tile length (in mm) (in inches)
B = tile width (in mm) (in inches)
C = tile width (in mm) (in inches)
D = joint width (in mm) (in inches)
In regards to the calculation of consumption for the different tile sizes and joint widths, refer to the product calculator available at www.litokol.it

CONSUMPTION TABLES

CONSUMPTION AS ADHESIVE

Consumption	3.5 mm (0.14in) trowel: 1.6 kg/m^2 (3.5lb/yd^2)
	6 mm (0.24in) trowel: 2.5 kg/m^2 (5.5lb/yd^2)
	8 mm (0.31in) trowel: 3 kg/m^2 (6.6lb/yd^2)
	10 mm (0.39in) trowel: 3.5 kg/m^2 (7.7lblb/yd^2)

CHEMICAL RESISTANCE TABLE

The table provides a summary of the chemical resistance tests performed according to Regulation UNI EN 12808-1
Chemical resistance of ceramic coverings grouted with EpoxyElite EVO - Intended use: industrial floors

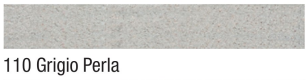
Group	Name	Conc. %	CONTINUOUS USE				INTERMITTENT USE
			24 hours	7 days	14 days	28 days	
Acids	Acetic acid	2.5	●	●	●	●	●
		5	●	●	●	●	●
	Hydrochloric acid	37	●	●*	●*	●*	●
	Citric acid	10	●	●	●	●	●
	Lactic acid	2.5	●	●	●	●	●
		5	●	●	●	●	●
		10	●	●	●	●	●
	Nitric acid	25	●	●	●	●*	●
		50	●	●	●	●	●
	Pure Oleic acid	0	●	●	●	●	●
	Sulfuric acid	1.5	●	●	●	●	●
		50	●	●	●	●	●
		96	●	●	●	●	●
	Tartaric acid	10	●	●	●	●	●
Alkalis	Ammonia in solution	25	●	●	●	●	●
	Caustic soda	50	●	●	●	●	●
	Sodium hypochlorite in solution	10	●	●	●	●	●
	Conc. Active IC	10	●	●	●	●	●
	Potassium hydroxide	50	●	●	●	●	●
Saturated solutions at 20°C (+68°F)	Calcium Chloride	0	●	●	●	●	●
	Sodium Chloride	0	●	●	●	●	●
	Sugar	0	●	●	●	●	●
Oils and fuels	Lead-free petrol	0	●	●	●	●	●
	Diesel	0	●	●	●	●*	●
	Extra Virgin Olive Oil	0	●	●	●	●	●
	Lubricant oil	0	●	●	●	●	●
Enzymatic cleaners	Detergent 1 at 4%	0	●	●	●	●*	●
	Detergent 2 at 5%	0	●	●	●	●	●
Solvents	Acetone	0	●	●	●	●	●
	Ethylene glycol	0	●	●	●	●	●
	Ethyl alcohol	0	●*	●*	●*	●*	●*
	Hydrogen peroxide	10 vol	●	●	●	●	●
		25 vol	●	●	●	●	●

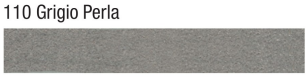
KEY

●	RESISTANT
●*	RESISTANT WITH POSSIBLE COLOR VARIATIONS
●	NON-RESISTANT

COLOR TABLE

100 Bianco assoluto


110 Grigio Perla


125 Grigio Cemento

140 Nero Grafite

205 Travertino

210 Greige

225 Tabacco

230 Cacao

NOTES

Data detection at temperature +23 °C (+68°F), R.H. 50% and with no wind. May vary depending on the specific conditions of the installation site.
The colors and images of the products are intended purely as a guideline and do not necessarily constitute a faithful representation of the originals.

Scheda **n. 324**
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The information and provisions contained in this technical data sheet reflect our best experience. Given the impossibility of directly intervening on the conditions of the work site and execution of the works, they represent indications of a general nature, which are in no way binding on our Company. It is therefore advisable to perform a spot test to check the suitability of the product for the intended use. In any case, users must determine whether or not it is suitable for the intended use and shall assume all associated responsibility.

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