



STARLIKE®

TWO-PART ACID-RESISTANT EPOXY MORTAR FOR INSTALLATION AND GROUTING OF CERAMIC TILES AND MOSAIC WITH JOINT WIDTHS BETWEEN 1 AND 15 mm. PATENT PRODUCT 05744761.7 B1



New patented formula. UV - resistant attested by Modena and Reggio Emilia University .

DESCRIPTION

Two-part anti-acid epoxy mortar. Part A consists of an epoxy resin mixture, siliceous aggregates and additives.

Part B consists of a mixture of organic catalysts.

The product's main characteristics are:

- Extremely easy application and cleaning, even compared to normal cementitious sealants.
- Stable and uniform colouring for all types of tiles with exclusive colour effects.
- High mechanical strength.
- Waterproof.
- Total absence of cracking or crazing during hardening.
- Excellent chemical resistance.

CLASSIFICATION EN 13888

LITOKOL STARLIKE®: Class RG Reactive grout

CLASSIFICATION EN 12004

LITOKOL STARLIKE®: Class R2T Enhanced reactive adhesive with zero vertical slip

PACKAGING

2.5 kg plastic bucket	Standard pallet 367,5 kg
5 kg plastic bucket	Standard pallet 450 kg
10 kg plastic bucket	Standard pallet 400 kg

FIELDS OF APPLICATION

Suitable for acid-resistant installation and grouting of floor and wall tiles and mosaic in interiors and exteriors with grout joints between 1 and 15 mm wide, such as:

- Floor and wall tiles in general.
- Floor and wall tiles in bathrooms and showers.
- Underfloor heating.
- Kitchen countertops.
- Terraces and balconies.

Suitable for applications where the surfaces are exposed to aggressive chemical substances (see chemical resistance table) such as dairies, abattoirs, pubs, food factories in general.

It is also recommended for grouting swimming pools and tanks, containing thermal or brackish water.

Suitable to the contact with food items, according to D.M of 21.03.1973 (Hygienic discipline of packaging, food containers and tools for the contact with food items and personal use products) and according to the following Decrees of the Health Ministry: 26.04.1993, n.220; 22.07.1998, n.338 ; 28.03.2003, n.123.

A copy of the certificate may be asked to the Litokol Technical Bureau.

The product, therefore, can be used for the grouting of ceramic tiles in environments, submitted to direct contact with food items, such as: workbenches for meat, dairy products or flours, basins for fish breeding, kitchen tables in restaurants, bakeries and pastry shops.

Suitable for installation and grouting of mosaic in swimming pools on the waterproof membranes as Elastocem and Coverflex.

APPLICATION

PRELIMINARY CHECKS AND JOINT PREPARATION

Check that the adhesive or mortar used to fix the tiles has completely hardened and dried.

The joints must be clean, free of powder and empty down to at least 2/3 of the tile thickness.

Any adhesive or mortar that has squeezed up inside the joints must be removed.

MIXING RATIOS

PART A: 100 parts by weight PART B: 8 parts by weight

The two parts are pre-batched in their respective containers

MIX PREPARATION

Cut off a corner from the bag, containing the catalyst (part B), situated in the small bucket, and pour it onto part A (paste).

It is recommended to empty completely the bag with the catalyst, rolling it up towards the cut side.

Mix using an electric drill equipped with mixing paddle until a uniform, lump-free mix is obtained.

Scrape the sides and the bottom of the container, using a steel spatula, to make sure that all the paste is catalyzed.

Hand mixing is not recommended.

The two parts are pre-batched in their packaging, avoiding, in this way, all risk of mixing errors.

The paste is workable for approximately 1 hour at a temperature about +23°C.

GROUTING

Introduce the paste into the joints using a special green rubber float (art. 104/G).

For large surfaces, an electric single-brush floor maintenance machine equipped with an abrasion-resistant rubber scraper can be used. Remove excess product using the rubber float.

The product's pot life and hardening time is strongly dependent on the ambient temperature.

The ideal temperature for application is between +18 and +23°C.

In these conditions the product is an easily workable smooth mortar, with a pot life of about 1 hour.

It is ready for foot traffic after 24 hours.

At a temperature of +15°C it takes three days before the surface is ready for foot traffic.

The floor is ready to use and resistant to chemicals after 5 days at a temperature of +23°C and after 10 days at a temperature of +15°C.

At temperatures between +8 and +12°C, the product is very dense and difficult to apply.

The hardening time is also lengthened considerably. Do not add water or solvents to improve workability.

In hot weather it is advisable to apply the product to the floor as quickly as possible so as not to shorten further the pot life due to the reaction heat in the container.

CLEANING AND FINISHING

The grout work must be cleaned and finished while the product is still wet and in any case in the shortest possible time.

Take care not to remove product from the joints or leave stains on the tile surface.

Cleaning and finishing can be performed either manually or using an electric single-brush machine equipped with a felt disc.

Manual method

First sprinkle clean water over the grouted surface. If necessary, perform initial cleaning using a float equipped with a moistened white felt (art. 109/G).

Make circular movements in both clockwise and anticlockwise directions in order to seal perfectly the sides of the tiles and to remove excess grout from the surface of the tiles.

Now perform a second pass with a sweepex sponge (art. 128/G) in order to obtain a smooth, closed surface and to remove completely the product from the surface of the tiles, without removing it from the joints, as well as to dry off the excess of water.

When the felt and sponge are impregnated with resin and can no longer be used, they must be replaced.

Stains or residues of transparent product can be removed after 24 hours or at any rate after grout hardening (the time of hardening depends greatly on the environmental temperature), using the specific cleaners LITONET (for floors) and LITONET GEL (for walls).

For a correct use see the technical data sheet.

Method with single-brush machine

After removing excess grout from the surface, sprinkle plenty of clean water over the grouted surface. Now commence cleaning using the single-brush machine equipped with a felt disc. Replace the felt disc when it is impregnated with product. If necessary, the cleaner LITONET can be used to remove the residues of epoxy film after 24 hours or at any rate after grout hardening (the time of hardening depends greatly on the environmental temperature).

Use of litonet and litonet gel

Spread LITONET or LITONET GEL on the whole surface to be treated with white felt (art. 109/G).

Let it act for about 15-30 minutes.

Then scrub with white felt (art.109/G) or with single-brush machine in case of big surfaces.

Rinse with water and dry immediately with a clean and dry cloth.

Do not wait the evaporation of the rinse water to avoid the formation of stains on the ceramic surface.

USE AS ADHESIVE

Apply to the substrate using a trowel with suitable notch size, then position the tiles and press firmly into place

CAUTIONS

• If possible, apply the product at temperatures between +18°C and +23°C.

Do not use at low temperatures or in environment with high humidity, in order to avoid the superficial carbonation that may modify the uniformity of the colour.

• Remove excess product from the tile surface rapidly because once hardened it will have to be removed mechanically, seriously jeopardising the finished result.

• Mix the two components (A+B) correctly.

• While cleaning change frequently the water.

- Change the felt and the sponge when they are impregnated with resin.
- Don't walk on the just grouted surface so as not to stain the floor with epoxy resin.
- Do not cover the grouted surface with length of cloth or other materials to avoid the condensation that may cause the superficial carbonation of the product with the resulting non-homogeneity of the colour.
- Do not use for grouting Tuscan terracotta or other materials and porous manufactured products like cementitious riddles.
- In case of grouting natural stones, it is necessary to execute a preliminary test, in order to verify the absorption of resin by the stone slabs.

In case of the resin absorption, the dark stains may form on the sides and on the surface of the slabs and they can't be removed. This problem is usual for marbles of light colours.

- The product must not be used for grouting tanks containing aggressive substances with which only occasional contact is permitted (see chemical resistance table).
- Do not mix the product with water or solvents.
- Thin ceramic stoneware obtained through compaction and with structured faux wood surfaces can present problems for the removal of halos. In these cases, it is recommended to perform a preventive sample application or consult the Litokol technical office.
- Do not use for applications not stated on this technical sheet.

IDENTIFICATION DATA			
Appearance	Part A: thick coloured paste		
	Part A: thick coloured paste		
Colours available	CLASSIC COLLECTION	Tortora C.490	Mela C.410
	Bianco assoluto C.470	Travertino C.290	Limone C. 430
	Bianco ghiaccio C.270	GLAMOUR COLLECTION	Arancio C.460
	Titanio C.310	Turchese C.400	Rosso oriente C. 450
	Silver C. 220	Artic blu C.390	METALLIC COLLECTION
	Ardesia C.480	Zaffiro C.260	Platinum
	Antracite C.240	Corallo C.230	Shining gold
	Grigio C. 280	Lilla C. 380	Bronze
	Moka C. 420	Ciclamino C. 370	Copper
	Pietra d'Assisi C. 410	Melanzana C.360	Rusty
	Sabbia C.250	Lime C.440	
	Customs code	3506 91 00	
Shelf life	24 months in original packaging in dry place		

APPLICATION DATA	
Time before grouting	Floor tile installation with normal-setting adhesive: 24 hours Floor tile installation with fast-setting adhesive: 4 hours Floor tile installation with mortar: 7-10 days Wall tile installation with normal-setting adhesive: 6-8 hours Wall tile installation with fast-setting adhesive: 4 hours Wall tile installation with mortar: 2-3 days
Mixing ratios	PART A: 100 parts by weight PART B: 8 parts by weight The two parts are pre-batched in their respective containers
Mix consistency	Creamy
Specific gravity of mix	1,55 kg/l
Pot life	About 1 hour at T=+23°C
Permitted application temperatures	From +12°C to +30°C
Recommended application temperatures	From +18°C to +23°C
Walk on time	24 hours at T=+23°C
Ready for use	5 days at T=+23°C
Joint width	From 1 to 15 mm

CONSUMPTION AS GROUT kg/mq

Tile (mm)	Joint (mm)						
	1,5	2	3	4	5	7	10
10x10x4	1,40	1,86					
10x10x10	4,65	6,20					
15x15x4	0,8	1,7					
15x15x10	2,1	4,1					
15x30x8	1,2	2,5					
20x20x3	0,70	0,93	1,40	1,86	2,33	3,26	4,65
23x23x8	1,1	2,2	3,2	4,3	5,4	7,5	10,8
25x25x10	1,2	2,5	3,7	5	6,2	8,7	12,4
50x50x4	0,2	0,5	0,7	1	1,2	1,7	2,5
50x50x10	0,6	1,2	1,9	2,5	3,1	4,3	6,2
100x100x8	0,37	0,50	0,74	0,99	1,24	1,74	2,48
125x240x12	0,34	0,45	0,68	0,91	1,3	1,47	2,26
150x150x6	0,18	0,24	0,36	0,48	0,61	0,85	1,21
150x150x8	0,25	0,33	0,50	0,66	0,83	1,16	1,65
200x200x8	0,19	0,25	0,37	0,50	0,62	0,87	1,24
250x330x8	0,13	0,17	0,26	0,35	0,44	0,61	0,87
300x300x8	0,12	0,17	0,25	0,33	0,41	0,58	0,82
300x600x10	0,12	0,16	0,23	0,31	0,39	0,54	0,78
400x400x10	0,12	0,16	0,23	0,31	0,39	0,54	0,78
450x450x10	0,10	0,14	0,21	0,27	0,34	0,48	0,68
600x600x10	0,08	0,10	0,15	0,20	0,26	0,36	0,51

COMSUPTION AS ADHESIVE

Trowel notc size: 4 mm

 Consumption: 1,6 Kg/m²
PERFORMANCE

Shear adhesion strength (EN 12003)	Initial ≥ 2 N/mm ² After immersion in water ≥ 2 N/mm ² After thermal shock ≥ 2 N/mm ²
Abrasion resistance (EN 12808-2)	≤ 250 mm ³
Mechanical flexural strength after 28 days in standard conditions (EN 12808-3)	≥ 30 N/mm ²
Mechanical compressive strength after 28 days in standard conditions (EN 12808-3)	≥ 45 N/mm ²
Shrinkage (EN 12808-4)	$\leq 1,5$ mm/m
Water absorption after 4 hours (EN 12808-5)	$\leq 0,1$ g
Temperature of use	From -20°C to $+100^{\circ}\text{C}$

SAFETY INFORMATION

Consult the Material Safety Data Sheet, available on request.

PRODUCT FOR PROFESSIONAL USE.

CHEMICAL RESISTANCE TABLE

(the table is a summary of the chemical resistance proof made according to regulation UNI EN 12808)
CHEMICAL RESISTANCE ON 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	●	●	●	●	●
	Oleic Acid	-	●	●	●	●	●
	Sulphuric Acid	1,5	●	●	●	●	●
		50	●	●	●	●	●
		96	●	●	●	●	●
Tannic Acid	10	●	●	●	●	●	
Tartaric Acid	10	●	●	●	●	●	
Oxalic Acid	10	●	●	●	●	●	
Alkalis	Ammonia in solution	25	●	●	●	●	●
	Caustic Soda	50	●	●	●	●	●
	Sodium Hypochlorite Conc. Cl active	>10	●	●	●	●	●
	Caustic Potash	50	●	●	●	●	●
	Sodium Bisulphite	10	●	●	●	●	●
Concentrated solutions 20°C	Iposulphite Sodium		●	●	●	●	●
	Calcium Chloride		●	●	●	●	●
	Sodium Chloride		●	●	●	●	●
	Ferric Chloride		●	●	●	●	●
	Sugar		●	●	●	●	●
Oils and fuels	Petrol, Fuels		●	●	●	●	●
	Turpentine		●	●	●	●	●
	Gas Oil		●	●	●	●	●
	Olive Oil		●	●	●	●	●
	Lube Oil		●	●	●	●	●
Solvents	Acetone		●	●	●	●	●
	Ethylene Glycol		●	●	●	●	●
	Glycerine		●	●	●	●	●
	Ethyl Alcohol		●	●	●	●	●
	Solvent Petrol		●	●	●	●	●
	Peroxide Water	10	●	●	●	●	●
25		●	●	●	●	●	

KEY

- EXCELLENT RESISTANCE
- GOOD RESISTANCE
- POOR RESISTANCE

Although the information provided on this technical sheet is accurate to the best of our knowledge and experience, it is intended purely as a guideline. The user must carry out preliminary practical tests for each specific job and is solely responsible for the final result.

Sheet N°308

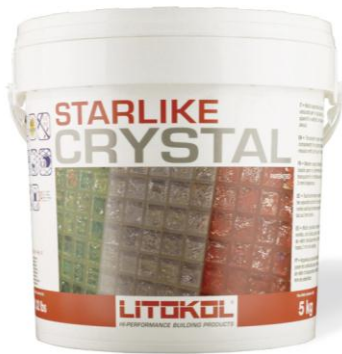
Rev. n. 7

Date: August 2012

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= ISO 9001 =



STARLIKE® CRYSTAL

TRANSLUCENT EPOXY MORTAR WITH TWO ANTACID COMPONENTS FOR GROUTING TRANSPARENT AND ARTISTIC GLASS MOSAICS WITH JOINTS UP TO 2 mm. WIDE



New patented formulation resistant to UV and the weather-climate, in collaboration with the University of Modena and Reggio Emilia

DESCRIPTION

Part A consists of a mixture of epoxy resin, inert substances based on glass beads with a fine particle size and rheological components of organic origin. Part B consists of a mixture of amine-based hardeners. The main features of the product are:

- Translucent colour that allows light filtration.
- Smooth finish thanks to the fine particle size of the inert substances.
- Extremely easy application and cleaning.
- High mechanical strength.
- Water proof.
- Total absence of cracks or crazing after hardening.
- Excellent chemical resistance.
- Product suitable for direct contact with food under Italian Ministerial Decree of 21/03/1973 (a copy of the certificate can be requested from the Litokol Technical Office)

EN 13888 CLASSIFICATION: Class RG – Reactive sealant for joints

PACKS

2.5 kg plastic bucket	5 kg plastic bucket
367,5 kg standard pallet	450 kg standard pallet

FIELDS OF APPLICATION

Starlike® Crystal's special translucent colouring allows the product applied in the joints to "absorb" the colour of the transparent glass tiles and then adapt according to the colour. The best results are obtained if the mosaic is applied to transparent supports such as glass and Plexiglas, possibly backlit by a light source.

In this case, the mosaics must be glued using a suitable transparent adhesive in cartridge form. In the case of traditional supports such as cement plasters or plaster of Paris, panelling etc. the mosaics must be bonded with Litoplus K55 white adhesive (class C2TE cement adhesive) or Litoelastic (two-component reactive adhesive class R2T) depending on the type of support. Thanks to this feature, with Starlike® Crystal it is possible to achieve glass mosaic surfaces with effects of considerable value and visual impact such as:

- Creating backlit interior walls.
- Backlit coatings of bars or public places.
- Floors and walls in bathrooms, kitchens, showers etc.
- Creating furnishing surfaces such as columns, tables etc.

Another possibility is using Starlike® Crystal for grouting artistic, i.e. compositions made up of mosaic tiles which, when suitably shaped and mixed, reproduce exclusive images rich in nuances and shadows. If the grouting of these images is done with traditional coloured sealants, the appearance of the figure represented is

compromised, because the coloured grout creates a discontinuity between the mosaic tiles.

Conversely, using Starlike® Crystal, thanks to its semi-transparency, retains the original nuances of the composition, creating "neutral", colourless grouting that does not interfere with the image.

PRELIMINARY CHECKS AND PREPARATION OF JOINTS

Make sure that the adhesive used for bonding the mosaic is completely dry and hardened. The joints must be clean, free of dust and empty for the entire thickness of the mosaic in order to ensure the translucent effect of the product. For bonding, it is advisable to use a spatula with small triangular teeth (art. 112/D-V2).

MIXING RATIO

COMPONENT A 100 parts in weight
COMPONENT B 8,3 parts in weight

The two components are pre-dosed in their respective packs.

PREPARING THE MIXTURE

Cut one corner of the sachet containing the catalyst (component B) located inside the bucket and pour it onto component A (paste). It is advisable to pour out the entire contents of the catalyst, rolling and squeezing the sachet progressively from the sealed side towards the cut side.

Mix with the electric drill fitted with a paddle, from the bottom upwards and downwards for a number of revs until an even lump-free mixture is obtained.

Scrape the sides and bottom of the bucket with a spatula or trowel to ensure no non-catalysed product remains. It is not advisable to do the mixing by hand.

The packs of the components are pre-dosed, and therefore make any error in mixing impossible. The resulting mixture remains workable for about 1 hour at a temperature of about +23°C.

GROUTING THE MOSAIC SURFACE

Apply the mixture obtained into the joints, using the special green spatula (art. 104/G). In the case of wall application, it is recommended that the sealant is applied in complete vertical strips before cleaning.

Remove any excess product using the same rubber spatula. The material must be introduced in the joints before cleaning with water so as to prevent the formation of white crystals on the surface.

The workability and hardening time of the product is greatly influenced by the environmental temperature.

The optimum temperature for application is between +18 and +23°C.

Under these conditions, the product appears like a soft, easily workable mortar, with a workability time of approximately 1 hour. It will be possible to walk on it after 24 hours.

At a temperature of +15°C, it will take three days before it can be walked on. At temperatures of between +8 and +12°C, the product proves to be more consistent and harder to apply.

The hardening time is also greatly lengthened. It is advisable not to add water or solvents to improve the workability. At high temperatures, it is advisable to distribute the product as quickly as possible onto the surface, so as not to further shorten the workability time following the reaction heat present in the pack.

CLEANING AND FINISHING

Cleaning and finishing the grouting should be done while the product is still fresh, and in all cases as quickly as possible, taking care not to empty the joints and without leaving product marks on the surface of the mosaics.

Cover the grouted surface with clean water. Carry out initial cleaning using a spatula with damp white felt (art. 109/G), making circular movements both clockwise and anti-clockwise, in order to seal the sides of the mosaic tiles perfectly and to remove any excess sealant from the surface. Then clean again using a hard sweepex sponge (art. 128/G) for a smooth, closed surface, completely removing the product from surface of the mosaic, without emptying the joints and drying any excess water.

During this phase, prevent the water from entering the joints that are still empty, interrupting the cleaning process a few centimetres before the empty joints.

When the felt and sponge are impregnated with resin and can no longer be cleaned, they must be replaced.

Stains or residues of transparent product can be removed after 24 hours or at any rate after grout hardening (the time of hardening depends greatly on the environmental temperature), using the specific cleaners LITONET (for floors) and LITONET GEL (for walls).

Read the relative technical data sheet for correct use.

USING LITONET AND LITONET GEL TO REMOVE MARKS

Spread LITONET or LITONET GEL onto the surface to be cleaned with the help of the white felt (art. 109/G). Leave on for 15-30 minutes.

Then intervene with the white felt, rubbing the surface.

Rinse with clean water and dry immediately with a clean, dry cloth. Do not wait for the rinse water to evaporate as marks would form again on the mosaic surface.

WARNINGS

- The product can only be applied for grouting transparent or artistic glass mosaics with joints not exceeding 2 mm.
- Apply the product preferably at temperatures between +18 °C and +23 °C. Do not apply if there are low temperatures or high humidity so as to prevent the formation of surface carbonation which could affect the uniformity of the colour.
- Prevent the water from entering the joints that are still empty while cleaning, interrupting the cleaning process a few centimetres before the empty joints.
- The material must be introduced in the joints before cleaning with water.
- Avoid rising adhesive in the thickness of the joint as this interferes with the end colour. Even discontinuity in the application of the adhesive can be noted when the grouting is completed.
- Make sure that the equipment used and the mosaic that is to be sealed are cleaned. Any colour interference is noted since it is a translucent product.
- Remove any excess product promptly from the surface of the mosaics as, once hardening has taken place, the product can no longer be removed unless mechanically, with serious risks for the final result of the work.
- Mix the two components (A+B) correctly.
- Change the water frequently.
- Change the felt and sponge when saturated with product.
- Do not wait more than 72 hours for the final cleaning with Litonet or Litonet gel.
- Do not walk on the newly grouted surface, in order to avoid damaging the flooring with resin residues.
- Do not cover the newly grouted surface with cloths or other material so as to prevent the formation of condensation that would lead to surface carbonation on the product, altering the uniformity of the colour. Wait at least 24-48 hours depending on the temperature before protecting the surface.
- The product cannot be used for grouting tanks containing aggressive substances permitted for intermittent contact only (see chemical resistance chart shown in the technical data sheet).
- Do not mix the product with water or solvents.

IDENTIFICATION DATA

Appearance	Component A: translucent paste Component B: thick liquid
Colour	Crystal C.350
Customs classification	3506 91 00
Storage time	24 months in the original packs in a dry place

APPLICATION DATA

Recommended adhesives for laying mosaics	Cement foundations, plaster of Paris base, old tiles: Litoplus K55 Wood, metal, fibreglass-reinforced plastic panelling: Litoelastic Plexiglass: Primer 1217 + OTTOCOL M501 transparent Glass: OTTOCOL M501 transparent
Recommended spatula	Small toothed spatula (art. 112/D – V2)
Waiting time for grouting	24 hours
Mixing ratio	Component A: 100 parts in weight - Component B: 8,3 parts in weight The two components are pre-dosed in their respective packs
Consistency of the mixture	Doughy
Specific weight of the mixture	1.55 kg/l
Useable time of the mixture	About 1 hour at T=+23°C
Application temperatures	Admissible: from +12°C to +30°C - Recommended: from +18 to +23°C
Can be walked on	24 hours at T=+23°C
Working time	5 days at T=+23°C
Width of the joints	Up to 2 mm

PERFORMANCE

Abrasion resistance (EN 12808-2)	≤ 250 mm ³
Mechanical resistance to bending after 28 days in standard condition (EN 12808-3)	≥ 30 N/mm ²
Mechanical resistance to compression after 28 days in standard conditions (EN 12808-3)	≥ 45 N/mm ²
Shrinkage (EN 12808-4)	≤ 1,5 mm/m
Water absorption after 4 hour (EN 12808-5)	≤ 0,1 g
Operating temperatures	From – 20°C to +100°C

CONSUMPTION

1 kg/m² for mosaics 20x20 mm thickness 3 mm (joint = 2 mm)
2 kg/m² for mosaics 10x10 mm thickness 3 mm (joint = 2 mm)

SAFETY INFORMATION

Consult the Material Safety Data Sheet, available on request.

PRODUCT FOR PROFESSIONAL USE.

SPECIFICATIONS

The decorative grouting of the joints between glass mosaics, generally applied to the floor or wall indoors or outdoors must be applied with translucent two-component acid resistant epoxy mortar such as Starlike® Crystal of Litokol Spa. The grouting will be smooth and compact, with no cracks, non-absorbent, uniform in colour, UV resistant and weatherproof.

CHEMICAL RESISTANCE TABLE

(the table is a summary of the chemical resistance proof made according to regulation UNI EN 12808)
CHEMICAL RESISTANCE OF CLADDINGS GROUTED WITH STARLIKE® CRYSTAL

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	●	●	●	●	●	
	Acido lattico		2,5	●	●	●	●	●
			5	●	●	●	●	●
			10	●	●	●	●	●
	Nitric Acid		25	●	●	●	●	●
			50	●	●	●	●	●
	Oleic Acid	-	●	●	●	●	●	
	Vitriol		1,5	●	●	●	●	●
			50	●	●	●	●	●
			96	●	●	●	●	●
	Tannic Acid	10	●	●	●	●	●	
	Tartaric Acid	10	●	●	●	●	●	
Oxalic Acid	10	●	●	●	●	●		
Alkalis	Ammonia in solution	25	●	●	●	●	●	
	Caustic Soda	50	●	●	●	●	●	
	Sodium Hypochlorite Conc. Cl active	>10	●	●	●	●	●	
	Caustic Potash	50	●	●	●	●	●	
	Sodium Bisulphite	10	●	●	●	●	●	
Concentrated solutions 20°C	Iposulphite Sodium		●	●	●	●	●	
	Calcium Chloride		●	●	●	●	●	
	Sodium Chloride		●	●	●	●	●	
	Ferric Chloride		●	●	●	●	●	
	Sugar		●	●	●	●	●	
Oils and fuels	Petrol, Fuels		●	●	●	●	●	
	Turpentine		●	●	●	●	●	
	Gas Oil		●	●	●	●	●	
	Olive Oil		●	●	●	●	●	
	Lube Oil		●	●	●	●	●	
Solvents	Acetone		●	●	●	●	●	
	Ethylene Glycol		●	●	●	●	●	
	Glycerine		●	●	●	●	●	
	Ethyl Alcohol		●	●	●	●	●	
	Solvent Petrol		●	●	●	●	●	
	Peroxide Water		10	●	●	●	●	●
		25	●	●	●	●	●	

KEY

- EXCELLENT RESISTANCE
- GOOD RESISTANCE
- POOR RESISTANCE

Although the information in this technical chart is from our best experience, it is merely indicative. Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet No. 317

Revision No.4

Date: February 2014

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= ISO 9001 =



LITOKROM STARLIKE DEFENDER

TWO COMPONENT ANTI-ACID, ANTIBACTERIAL AND ANTI-MOULD EPOXY MORTAR, TESTED AND CERTIFIED. SUITABLE FOR BONDING AND GROUTING CERAMIC TILES AND MOSAICS IN ENVIRONMENTS WITH HIGH HYGIENIC REQUIREMENTS WITH GAPS OF 1 TO 15 mm. IN WIDTH. PARTICULARLY SUITABLE IN COMBINATION WITH ANTIBACTERIAL CERAMIC TILES. 99.9% REDUCTION OF BACTERIAL LOADS.



UPGRADE

New patented formula UV - resistant attested by Modena and Reggio Emilia University .

DESCRIPTION

Two-component acid-resistant and antibacterial epoxy mortar. Part A consists of a mixture of epoxy resin, silica aggregate and additives. Part B consists of a mixture of organic catalysts. The main features of the product are:

- The ability to abate 99.9% of the main bacterial strains (Staphylococcus aureus and Escherichia coli).
- Extremely easy to apply and clean, even compared to leading cement sealants for grout joints.
- Stable and uniform colours on all types of tiles with exclusive chromatic effects.
- High mechanical strength.
- Waterproof.
- Total absence of cracks or crazing after hardening.
- Excellent chemical resistance.

EN 12004 CLASSIFICATION

Class RG – Reactive sealant for joints

EN 13888 CLASSIFICATION

Class R2T - Improved reaction resin adhesive with no vertical slip

FIELDS OF APPLICATION

Suitable for setting and grouting acid-resistant and antibacterial ceramic floor and wall tiles and mosaics with joints between 1 and 15 mm in environments requiring high performance in terms of hygiene and cleanliness such as:

- Health care facilities
- Analysis and research laboratories
- Child-care facilities and schools
- Sports facilities, locker rooms, gym showers
- Public and private swimming pools

- Collective and private kitchens
- Canteens
- Industries and agri-food warehouses
- Spas, saunas, steam baths

Also recommended for sealing ceramic tiling in residential dwellings in order to impart antibacterial properties and raise the level of living comfort, such as:

- Flooring and floor and wall coverings in general
- Underfloor-heated floors.
- Floor and wall coverings in bathrooms and showers.
- Kitchen counters
- Terraces and balconies.

Suitable for surfaces exposed to contact with harsh chemical substances (see chemical resistance chart) such as: cheese factories, butcher's, breweries, food industries in general. Also recommended to grout swimming pools or pools containing spring or brackish water.

• Product suitable for direct contact with food according to the Ministerial Decree of 03/21/1973 (Regulation regarding the hygiene of packaging, containers, utensils, which are designed to come into contact with foodstuffs or substances for personal use), and subsequent Decrees of the Ministry of Health 04.26.1993, n.220 and 07.22.1998, n.338 and 03.28.2003, n.123. A copy of the certificate may be requested from Litokol's technical department.

The product can therefore be used to grout ceramic tiles in environments subject to direct contact with food, such as: surfaces used for processing meat, dairy products, flour, tanks designed for fish farming, kitchen counters in restaurants, fry shops, bakeries, etc..

• Suitable for bonding and grouting mosaics in swimming pools, on waterproof pool liners such as ELASTOCEM and Coverflex.

PRELIMINARY CHECKS AND JOINT PREPARATION

Make sure that the adhesive or the mortar used to bond the mosaic is completely hardened and dry. The joints must be clean, free of dust and empty for at least 2/3 of the thickness of the tiles. Any traces of adhesive or mortar escaping from the joints must be removed.

MIXING RATIOS

COMPONENT A 100 parts in weight COMPONENT B 8 parts in weight
The two components are pre-dosed in their respective packs.

PREPARING THE MIXTURE

Cut one corner of the sachet containing the catalyst (component B) located inside the bucket and pour it onto component A (paste). It is advisable to pour out the entire contents of the catalyst, rolling and squeezing the sachet progressively from the sealed side towards the cut side. Mix using a drill with a propeller at low speed until you achieve a smooth mixture without lumps. Scrape the sides and bottom of the bucket with a spatula or trowel to ensure no non-catalysed product remains. It is not advisable to mix by hand. The packs of the components are pre-dosed, and therefore make any error in mixing impossible. The resulting mixture remains workable for about 1 hour at a temperature of about +23°C

GROUTING THE TILED SURFACE

Apply the obtained mixture to the joints, using the special green rubber edged spreader (art. 104/G). For large surfaces you can use an electric single disc machine equipped with an anti-abrasion rubber disc. Remove any excess product using the same rubber spreader. The workability and hardening time of the product is greatly influenced by the ambient temperature. The optimum temperature for application is between +18 and +23°C. Under these conditions the product is a soft workable mortar, with a working time of approximately 1 hour. It will be possible to walk on it after 24 hours. At a temperature of +15°C, it will take three days before it can be walked on. Commissioning the tiled surface with the subsequent chemical attack is possible after 5 days at a temperature of +23 ° C and after 10 days at a temperature of +15 ° C. At temperatures between +8 and +12 ° C the product is very thick and difficult to apply. The hardening time is also greatly lengthened. It is advisable not to add water or solvents to improve the workability. At high temperatures, it is advisable to distribute the product as quickly as possible onto the surface, so as not to shorten the working time following the reaction heat present in the pack even further

CLEANING AND FINISHING

Cleaning and finishing the grouting should be done while the product is still fresh, and in all cases as quickly as possible, taking care not to empty the joints and without leaving any residue of the product on the surface of the tiles. This can be done either manually or by using a special electric single disc machine equipped with a felt pad.

MANUAL METHOD

Cover the grouted surface with clean water. Carry out initial cleaning using a float with damp white felt pad (art. 109/G), making circular movements both clockwise and anti-clockwise, in order to seal the sides of the tiles perfectly and to remove any excess sealant from the surface of the tiles.

Clean the surface a second time using a hard sweepex sponge (art. 131/G) to obtain a smooth, sealed surface, completely removing any residue of the product from the tiles, without emptying the joints and by drying any excess water. When the felt pad and sponge are soaked with resin and can no longer be cleaned, they must be replaced.

Stains or residues of transparent product can be removed after 24 hours or at any rate after grout hardening (the time of hardening depends greatly on the environmental temperature), using the specific cleaners LITONET (for floors) and LITONET GEL (for walls).

Read the relative technical data sheets for the correct use.

SINGLE DISC METHOD

After removing excess grout from the surface, sprinkle the grouted surface abundantly with clean water. Then begin cleaning the floor with a single disc machine equipped with a felt pad. Replace the disk when the felt pad is soaked with product.

Remove any halo-stains with LITONET detergents after 24 hours or at any rate after grout hardening (the time of hardening depends greatly on the environmental temperature).

USING LITONET - LITONET GEL TO REMOVE HALO-STAINS

Using the white felt pad (art. 109/G) spread the detergent over the entire surface you need to clean. Leave on for 15-30 minutes. Follow by brushing the surface using a white felt pad (art. 109/G) or a single disc machine for large areas. Rinse with clean water and dry immediately with a clean, dry cloth. Do not wait for the rinse water to evaporate as halo-stains will form on the ceramic surface.

USE AS ADHESIVE

Apply the mixture onto the substrate using a notched trowel with adequately sized notches and set the tiles by applying a good amount of pressure.

CAUTIONS

- Apply the product preferably at temperatures between +18 °C and +23 °C. Do not apply at low temperatures or high humidity so as to prevent the formation of surface carbonation which could affect the uniformity of the colour.
- Remove any excess product promptly from the surface of the tiles as, once it has hardened, the product can only be removed mechanically, with serious risks for the final result.
- Mix the two components (A+B) correctly.
- Change the water frequently.
- Change the felt pad and sponge when saturated with product.
- Do not walk on the newly grouted surface, in order to avoid damaging the flooring with resin residues.
- Do not cover the newly grouted surface with cloths or other material so as to prevent the formation of condensation that would lead to surface carbonation on the product, altering the uniformity of the colour. Wait at least 24-48 hours depending on the temperature before protecting the surface.
- The product cannot be used to grout terracotta or other porous materials and manufactured products such as concrete kerbs.
- When grouting natural stone, it is essential to carry out a preliminary test to verify whether the slabs absorb the epoxy resin. In this case it would form a darker-coloured halo-stain on the surface and sides of the slabs that can not be removed. This problem generally arises with light-coloured marbles.
- The product cannot be used for grouting tanks containing aggressive substances permitted for intermittent contact only (see chemical resistance chart).
- Do not mix the product with water or solvents.
- Do not use the product for applications that are not reported on this data sheet.

IDENTIFICATION DATA

Appearance	Component A: dense coloured paste
	Component B: thick liquid
Colours available	Bianco assoluto C.470
	Titanio C.310
	Silver C. 220
	Grigio C.280
	Antracite C. 240
	Travertino C.290
	Sabbia C.250
Customs classification	3506 91 00
Storage time	24 months in the original package in a dry place

APPLICATION DATA

Waiting time for grouting	Setting floor tiles with normal setting adhesive: 24 hours Setting floor tiles with rapid set adhesive: 4 hours Setting floor tiles with mortar: 7-10 days Setting wall tiles with normal setting adhesive: 6 – 8 hours Setting wall tiles with rapid set adhesive: 4 hours Setting wall tiles with mortar: 2-3 days
Mixing ratio	Component A 100 parts in weight Component B: 8 parts in weight The two components are pre-dosed in their respective packs.
Consistency of the mixture	Doughy
Specific weight of the mixture	1.55 kg/l
Useable time of the mixture	About 1 hour at T=+23°C
Allowed application temperatures:	From +12°C to +30°C
Recommended application temperatures:	From +18°C to +23°C
Can be walked on	24 hours at T=+23°C
Working time	5 days at T=+23°C
Width of the joints	From 1 to 15 mm
Used as a sealant	See attached table
Used as an adhesive	Notched trowel: 4 mm Consumption: 1.6 kg/m ²

CONSUMPTION AS GROUT kg/mq

Tile (mm)	Joint (mm)						
	1,5	2	3	4	5	7	10
10x10x4	1,40	1,86					
10x10x10	4,65	6,20					
15x15x4	0,8	1,7					
15x15x10	2,1	4,1					
15x30x8	1,2	2,5					
20x20x3	0,70	0,93	1,40	1,86	2,33	3,26	4,65
23x23x8	1,1	2,2	3,2	4,3	5,4	7,5	10,8
25x25x10	1,2	2,5	3,7	5	6,2	8,7	12,4
50x50x4	0,2	0,5	0,7	1	1,2	1,7	2,5
50x50x10	0,6	1,2	1,9	2,5	3,1	4,3	6,2
100x100x8	0,37	0,50	0,74	0,99	1,24	1,74	2,48
125x240x12	0,34	0,45	0,68	0,91	1,13	1,47	2,26
150x150x6	0,18	0,24	0,36	0,48	0,61	0,85	1,21
150x150x8	0,25	0,33	0,50	0,66	0,83	1,16	1,65
200x200x8	0,19	0,25	0,37	0,50	0,62	0,87	1,24
250x330x8	0,13	0,17	0,26	0,35	0,44	0,61	0,87
300x300x8	0,12	0,17	0,25	0,33	0,41	0,58	0,82
300x600x10	0,12	0,16	0,23	0,31	0,39	0,54	0,78
400x400x10	0,12	0,16	0,23	0,31	0,39	0,54	0,78
450x450x10	0,10	0,14	0,21	0,27	0,34	0,48	0,68
600x600x10	0,08	0,10	0,15	0,20	0,26	0,36	0,51

PERFORMANCE

Shear adhesion (EN 12003)	Initial $\geq 2 \text{ N/mm}^2$ After immersion in water $\geq 2 \text{ N/mm}^2$ After thermal shock $\geq 2 \text{ N/mm}^2$
Abrasion resistance (EN 12808-2)	$\leq 250 \text{ mm}^3$
Mechanical resistance to bending after 28 days in standard conditions (EN 12808-3)	$\geq 30 \text{ N/mm}^2$
Mechanical resistance to compression after 28 days in standard conditions (EN 12808-3)	$\geq 45 \text{ N/mm}^2$
Shrinkage (EN 12808-4)	$\leq 1,5 \text{ mm/m}$
Water absorption after 4 hours (EN 12808-5)	$\leq 0,1 \text{ g}$
Operating temperatures	From -20°C to $+100^\circ\text{C}$

PACKAGING

5 kg plastic bucket Standard pallet 450 kg

SAFETY INFORMATION according to 1907/2006/EC (REACH), Article 31

PART A

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight = 700) oxirane, mono[(C12-14-alkyloxy)methyl] derivs

Xi – Irritant

R 36/38 Irritating to eyes and skin.

R 43 May cause sensitisation by skin contact.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S 2 Keep out of the reach of children.

S 24/25 Avoid contact with skin and eyes.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

S 37/39 Wear suitable gloves and eye/face protection.

S 46 If swallowed, seek medical advice immediately and show this container or label.

Contains epoxy constituents. See information supplied by the manufacturer.

PART B

Hazard-determining components of labelling:

3,6-diazaoctanethylenediamin

3,6,9-triazaundecamethylenediamine

Xi – Irritant

R 36/38 Irritating to eyes and skin.

R 43 May cause sensitisation by skin contact.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S 2 Keep out of the reach of children.

S 23 Do not breathe fumes/aerosol.

S 24/25 Avoid contact with skin and eyes.

S 29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

S 37 Wear suitable gloves.

S 46 If swallowed, seek medical advice immediately and show this container or label.

CHEMICAL RESISTANCE TABLE

(the table is a summary of the chemical resistance proof made according to regulation UNI EN 12808)

CHEMICAL RESISTANCE ON 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	●	●	●	●	●
	Oleic Acid	-	●	●	●	●	●
	Sulphuric acid	1,5	●	●	●	●	●
		50	●	●	●	●	●
		96	●	●	●	●	●
	Tannic Acid	10	●	●	●	●	●
Tartaric Acid	10	●	●	●	●	●	
Oxalic Acid	10	●	●	●	●	●	
Alkalis	Ammonia in solution	25	●	●	●	●	●
	Caustic Soda	50	●	●	●	●	●
	Sodium Hypochlorite Conc. Cl active	>10	●	●	●	●	●
	Caustic Potash	50	●	●	●	●	●
	Sodium Bisulphite	10	●	●	●	●	●
Concentrated solutions 20°C	Iposulphite Sodium		●	●	●	●	●
	Calcium Chloride		●	●	●	●	●
	Sodium Chloride		●	●	●	●	●
	Ferric Chloride		●	●	●	●	●
	Sugar		●	●	●	●	●
Oils and fuels	Petrol, Fuels		●	●	●	●	●
	Turpentine		●	●	●	●	●
	Gas Oil		●	●	●	●	●
	Olive Oil		●	●	●	●	●
	Lube Oil		●	●	●	●	●
Solvents	Acetone		●	●	●	●	●
	Ethylene Glycol		●	●	●	●	●
	Glycerine		●	●	●	●	●
	Ethyl Alcohol		●	●	●	●	●
	White spirit		●	●	●	●	●
	Peroxide Water	10	●	●	●	●	●
25		●	●	●	●	●	

KEY

- EXCELLENT RESISTANCE
- GOOD RESISTANCE
- POOR RESISTANCE

Although the information provided on this technical sheet represents the best of our knowledge and experience, it is intended purely as a guideline. The user must carry out preliminary practical tests for each specific job and is solely responsible for the final result.

Sheet no. 318

Revision no. 2

Date: August 2011

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
 Tel. +39 0522 622811 Fax +39 0522 620150
 www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
 SYSTEM CERTIFIED BY DNV
 = ISO 9001:2008 =



STARLIKE® MONOMIX

STAIN-RESISTANT, READY-TO-USE, MONO-COMPONENT, WATER-BASED, POLYURETHANE SEALANT FOR COMPACT AND FLEXIBLE JOINTS FEATURING DURABLE UNIFORM COLOURS. FREE FROM HAZARD CLASSIFICATIONS.



DESCRIPTION

STARLIKE® MONOMIX is the innovative polyurethane resin-based mortar in aqueous dispersion for the waterproof grouting of joints in ceramic tiles and glass mosaics with 1 to 6 mm wide joints.

ADVANTAGES

The special formula of STARLIKE® MONOMIX offers numerous advantages such as:

Ready to use

It does not require any preparation and prevents the release of dust into the environment as cement products do.

Reusable

Once the grouting task is completed, any left-over material can be reused even after a few months, avoiding unnecessary waste, if closed in the original package and stored at temperatures ranging from +5°C to +35°C.

Exempt from labelling

It does not contain solvents or irritating and corrosive products, STARLIKE® MONOMIX does not require labelling as ordinary cement or epoxy products. The user can therefore have a particularly safe product during processing.

Easy to clean

The colour of the product is given by superficially coloured ceramized quartz inerts and therefore no colour pigments are released on the surface of the tiles or mosaics during the cleaning process making it easy and fast.



Stable and uniform colours

The product does not contain cement therefore the possible formation of the efflorescence, typical in cement products, is avoided. The binding agent of STARLIKE® MONOMIX consists of polyurethane resins in aqueous dispersion which guarantees a high stability against the light, avoiding yellowing or colour variations as a result of exposure to UV light or artificial light sources.



Waterproof

Special water-repellent additives integrated into the product greatly reduce surface absorption of the joints making them waterproof with drip effect.

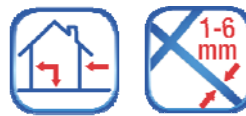


Stain-resistant

Thanks to its low surface absorption, STARLIKE® MONOMIX is particularly resistant to staining from oil, wine, vinegar, etc. See stain resistance table. It also features good resistance to various aggressive chemical agents. See table of chemical resistances.

Elastic

It does not contain cement, the product is characterised by excellent elasticity once hardened that makes it suitable for tiling applications subject to vibrations and/or deformations.



FIELDS OF APPLICATION

STARLIKE® MONOMIX can be used in the residential and public construction sector to grout joints with width from 1 to 6 mm for any type of ceramic tile including glass mosaics in indoor walls and floors and outdoor walls.

The list below shows examples of suitable application areas.

RESIDENTIAL

- Flooring and wall tiling, even heated, for bathrooms and kitchens.
- Flooring, even heated, in living rooms, bedrooms and entrance halls.
- Flooring in community areas such as balconies and staircases.
- Outdoor walls in general.
- Tiling on particularly elastic or moveable supports such as metal sheet, wooden panels or lightweight panels.

PUBLIC

- Flooring, even heated, in offices, shops, places of worship, meeting rooms, bars and restaurants, schools, hotels, exhibition halls.
- Outdoor walls in general.

APPLICATION

Preliminary checks and preparation of joints

Verificare Make sure that the adhesive or mortar used for the bonding of tiles or mosaics is completely dry and hardened. The joints must be clean, free of dust and at least 2/3 of them deep enough to be filled. Any traces of adhesive or mortar dripped between the joints must be removed while they are still fresh. Remove any plastic spacers.

Spotlight and Gold finishes

Like STARLIKE® two-component epoxy mortar, you can also add Spotlight and Gold additives to STARLIKE® MONOMIX to get unique and exclusive effects without affecting the particular ease of cleaning. These additives are available separately, in pre-dosed packs for the 1 and 2.5 kg STARLIKE® MONOMIX packages. Gently pour the chosen additive into the mixture and manually mix it with a spatula or trowel to obtain an uniform mixture.

Product to grout and clean

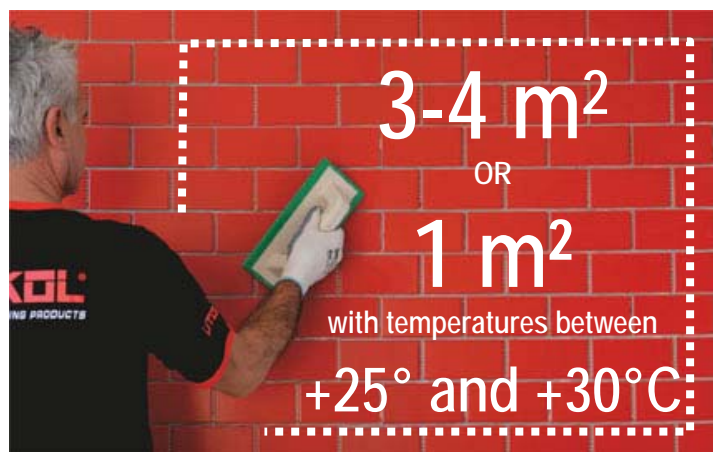
Joint grouting

STARLIKE® MONOMIX is a product ready for use and does not require any preparation. However, once the container is opened, it is recommended to mix it briefly and manually with a trowel or steel spatula.

Application of the product can be carried out at temperatures between +10°C and +30° C. Do not apply on outdoor walls if temperature drops below +10°C is forecasted to drop in the next 48 hours. Protect all surfaces from any water for 7 days.

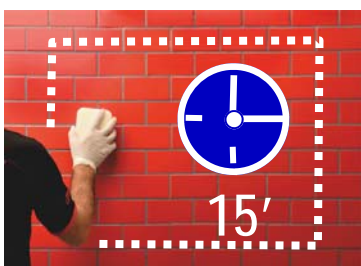
STARLIKE® MONOMIX is a product in aqueous dispersion and hardening occurs by water evaporation. As a result, drying and hardening process is influenced by temperature, by moisture, by the absorption of the tiles and by their thickness. Low temperatures or high environmental humidity lengthen hardening times.

Apply the mixture of **STARLIKE® MONOMIX** in the joints with a rubber spatula by spreading diagonally against the direction of the joints, without leaving gaps or dips and removing excess material from the surface of the tiles or mosaics. The partial filling of the joints may compromise the structural integrity of the product; it is therefore recommended to compress the product adequately into the joints with a rubber spatula until they are completely filled. If you are working by yourself, it is recommended to apply the product covering areas not exceeding 3-4 m² and that can be cleaned within 15 minutes. If there are two people working, it is recommended that an operator applies the plaster into the joints and that the other cleans the area immediately afterwards.



With temperatures near +30°C, it is recommended to apply the product covering an area not exceeding 1 m² and clean immediately.

To facilitate application (especially in hot climates), you can lightly moisten the surface of the tiles with the supplied sponge squeezed before applying the product, avoiding stagnation on the surface of the tiles or in the joints that are still empty. This allows the product to be applied better, slowing the formation of film on the surface of the tiles.



Cleaning and finishing MONOMIX CLEANER GEL

Cleaning and finishing of joints is done with a well-squeezed supplied sponge (art. 125/G), by performing circular movements while being careful not to empty the joints and without leaving marks on the surface. The least amount of water possible must be used in order to avoid damaging the product that is still fresh within the joints. Avoid the stagnation of water on the surface of the fresh grouting and prevent cleaning water from going in the empty joints. Change the cleaning water frequently (about every 10 m²). Avoid further cleaning when drying has started, as rubbing with a sponge during plaster cross-linking leads to the loss of surface resistance. Should transparent marks remain on the surface of the tiles or mosaics due to the film formation of the resin, it will be possible to intervene at least 24 hours after grouting with the neutral **MONOMIX CLEANER GEL**. Spread the pure product on the surface and after a few minutes, rub with white felt (art. 109/G), rinse with a moist sponge and dry with a clean cloth. It is recommended to apply **MONOMIX CLEANER GEL** on surfaces that are not too large (about 1-2 m²) so as not to let it come into contact with the grouting for more than 5 minutes. After cleaning, the product can be stepped on after 24 hours.

MAINTENANCE OF CERAMIC SURFACES GROUTED WITH STARLIKE® MONOMIX

Routine cleaning of ceramic or mosaic surfaces grouted with Starlike Monomix can be carried out with common detergents available on the market and observing the instructions for use and the dilutions recommended by the manufacturers and listed on the packaging. Products containing ethyl alcohol may slightly weaken the surface of the grouting which regains its original strength after a few hours. In cases of doubt, perform a preliminary test on a small area.

WARNINGS

- The product is ready to use. Do not add water as the dilution of the resin leads to a weakening of the plaster when it has hardened.
- Do not add cement, alcohol or foreign substances.
- Briefly mix the preparation by hand with a trowel or spatula before use. Avoid mixing with a drill.
- Apply the product with a temperature range between +10° C and +30° C.
- Do not use in the event of high environmental humidity.
- Do not use for outdoor flooring, tanks, swimming pools, saunas and steam rooms.
- Do not use in industrial environments.
- Do not use for the grouting of natural stone, hard surface ceramic tiles and marble mosaics. Do not use on surfaces subject to capillary moisture ascent.
- Based on the many types of ceramic tiles and mosaics available on the market today, it is recommended, in case of doubt, to perform a preventive grouting test in order to determine any incompatibility or cleaning difficulty.
- To clean, only use the sponge supplied that is inside the bucket. Using other sponges or felts or may compromise the surface compactness of the grout when it has hardened.
- When cleaning, always wring the sponge very well using the least amount of water possible, avoiding water stagnation on the surface of the grout that is still fresh.
- Protect the plaster from dust, dirt and corrosive materials while it is hardening.
- In the event of any leftover material it is recommended to reseal the package, making sure that the separation plate is put inside it. This procedure will ensure better preservation of the product.
- Do not use the product for applications not listed on the technical sheet.



STAIN RESISTANCE TABLE

STAINING AGENT	CONTACT TIME: 15 MINUTES
Vinegar	Can be cleaned with water
Ketchup	
Red wine	
Olive oil	
Coffee	

APPLICATION DATA

Waiting time for grouting

Floor application	Wall application
- with normal-setting adhesive: 24 hours	- with normal-setting adhesive: 6-8 hours
- quick drying adhesive: 4-6 hours	- quick drying adhesive: 4-6 hours
- with mortar: 7-10 days	- with mortar: 2-3 days
Application temperatures allowed	From +10°C to +30°C
Walkability(T=+23°C)	24 hours
Time of commissioning	7 days
Width of the joints	From 1 to 6mm
Cleaning the equipment	Can be cleaned with water while still wet. Once hardened cleans only mechanically

IDENTIFICATION DATA

Appearance	Dense coloured mixture
Specific weight of the mixture	1.56 kg/l
pH	8
Custom classification	3506 91 00
Storage time	24 months in unopened original packaging, at temperatures between +5°C and +35°C. Protect from freezing.

COLOURS

Bianco Assoluto C470	Ardesia C480	Pietra d'Assisi C300
Bianco Ghiaccio C270	Antracite C240	Sabbia C250
Titanio C300	Grigio C280	Tortora C490
Silver C220	Moka C420	Travertino C290

PERFORMANCE

Application temperatures	From -15°C to +80°C
UV resistance	Excellent
Resistance to moisture	Good

TABLE OF THE CHEMICAL RESISTANCES

Group	Name	Conc.%	30'	24h	24 hours
Acids	Acetic acid	10	●	●	●
	Hydrochloric acid	10	●	●	●
	Phosphoric acid	10	●	●	●
	Lactic acid	10	●	●	●
	Oleic acid	pure	●	●	●
	Citric acid	10	●	●	●
Alkali	Ammonia	10	●	●	●
	Caustic soda	10	●	●	●
	Sodium hypochlorite	10	●	●	●
Oils and fuels	Olive oil	pure	●	●	●
	Lubricant oil	pure	●	●	●
	Gasoline	pure	●	●	●
	Diesel	pure	●	●	●
Solvents	Ethyl alcohol	pure	●	●	●
	Oxygenated water	pure	●	●	●
	Acetone	pure	●	●	●
	Ethylene glycol	pure	●	●	●

● Excellent resistance ● Good resistance ● Poor resistance

Product to grout and clean

CONSUMPTION TABLE (Kg/m²)

Tile size (mm)	JOINT WIDTH (mm)				
	2	3	4	5	6
10x10x4	2.50				
15x15x4	1.70				
20x20x4	1.25				
50x50x4	0.50				
100x100x6	0.40	0.60	0.75	0.95	1.15
100x100x10	0.65	0.95	1.25	1.60	1.90
200x200x8	0.30	0.40	0.50	0.63	0.75
120x240x12				1.20	
250x250x12				0.75	
250x250x20				1.30	
300x300x10	0.22	0.32	0.42	0.53	0.65
300x600x4.5	0.10	0.12	0.15	0.20	0.25
300x600x10	0.18	0.25	0.30	0.40	0.50
330x330x10	0.20	0.30	0.40	0.50	0.60
400x400x10	0.16	0.25	0.32	0.40	0.50
450x450x12	0.17	0.25	0.33	0.41	0.50
500x500x12	0.15	0.22	0.30	0.37	0.45
600x600x3	0.03	0.05	0.06	0.08	0.10
600x600x4.5	0.05	0.07	0.09	0.12	0.14
600x600x12	0.12	0.19	0.25	0.31	0.37
600x1200x3	0.02	0.03	0.05	0.06	0.07
1000x3000x3	0.01	0.02	0.025	0.03	0.04

PACKAGING

1 kg plastic can

2.5 kg plastic bucket = Standard pallet 367.5 kg

INFORMATION ON SAFETY

Refer to the product's safety sheets available upon request.

PRODUCT FOR PROFESSIONAL USE

Although the information in this technical chart is source of our best experience, it is merely indicative.

Each specific case must be subjected to preliminary tests by the user who assumes the responsibility for the final outcome of the task.

Sheet No. 320

Revision No. 2

Date: July 2014



LITOKOL
HI-PERFORMANCE BUILDING PRODUCTS

Litokol S.p.A.
Via G. Falcone 13/1 - 42048 Rubiera (RE) Italy
Tel: +39 0522 622811 - Fax: +39 0522 620150
info@litokol.it www.litokol.it

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= ISO 9001 =



STARLIKE DECOR

EPOXY DECORATIVE FINISH FOR INTERIOR WALLS

DESCRIPTION

STARLIKE DECOR is an innovative system for creating low-thickness decorative finishes on interior walls based on LITOKROM STARLIKE[®] epoxy mortar technology.

The main advantages that STARLIKE DECOR provides are:

- Surface colour effect similar to grouts performed using LITOKROM STARLIKE[®] epoxy mortar. This allows for colour combination between ceramic tile or vitreous mosaic surfaces grouted with LITOKROM STARLIKE[®] and the surrounding wall finish created using STARLIKE DECOR.
- By using different methods of application with STARLIKE DECOR, unique colour and decoration effects can be created on the surfaces.
- Unlimited colour combinations can be achieved by overlaying different colour tones in subsequent applications.
- STARLIKE DECOR is quick and easy to apply. Finishes of high aesthetic quality can be carried out shortly, using appropriate equipment.
- Consumptions are reduced due to its low thickness and so intervention costs are limited.
- STARLIKE DECOR allows decorating vertical surfaces, such as raw concrete plasters, plasterboards, lightweight paneling, wood paneling, existing ceramic tiles or mosaics.

FIELDS OF APPLICATION

STARLIKE DECOR is highly versatile and can be used for finishing interior walls in a wide range of private and public environments such as:

- Bathrooms and shower enclosures
- Kitchens
- Saunas
- Hotel foyers
- Walls in bars, restaurants and discothèques
- Meeting rooms

It can also be used to decorate bar counters, doors, columns, etc.

SUBSTRATE PREPARATION

1 - Substrates to which STARLIKE DECOR is to be applied must be clean, solid, non-powdery, sufficiently mature, dry and flat. Suitable substrates are raw cement plasters, gypsum-board, and concrete after Primer C pre-treatment. Any paints, varnishes or glazes must be removed, including the civil finishing beneath and, before the application of the first coat, apply Primer C.

Low thickness lime, cement or gypsum based surface finishes must be removed and the substrate treated with Primer C

Non-flat cement-based substrates can be levelled using LITOPLAN RAPID ultrarapid thixotropic cement-based levelling mortar.

2 - In case of application on raw cement plasters, concrete, gypsum-boards, lightweight paneling and wood paneling use the

two-component epoxy substrate DECOR PRIMER, applying it with a smooth steel spatula, making an even levelling of approx. 1 mm. In case of application overlaying existing tiles or mosaics, apply DECOR PRIMER directly on the clean substrate, making 2 crossed coatings (the second coat must be applied after 24 hours from the first one). The first coat allows obtaining a white surface and to even the absorption of the substrate for the subsequent application of STARLIKE DECOR.

In case of slightly irregular substrates, a further application of DECOR PRIMER could be required to even the surface. Once the levelling is completed with DECOR PRIMER, wait approximately 24 hours until it dries before proceeding sanding the surface, to remove any crinkles or steps.

3 - Sand manually or using a white or light coloured 60 grit sanding paper, ensuring to remove dust formed after the operation. Once verified the homogeneity and flatness of the surface and ensured it is completely dry, proceed with the application of STARLIKE DECOR.

PREPARING STARLIKE DECOR

1 - Open the 2.5 kg pot of LITOKROM STARLIKE[®] of the chosen colour and pour the entire content of the catalyst (component B) contained in the sachet onto the coloured paste (component A).

2 - Pour in the third STARLIKE DECOR liquid component (pre-batched for the 2.5 kg pot of LITOKROM STARLIKE[®]) and mix with an electric drill equipped with mixing paddle until a uniform mix is obtained.

3 - If required, add one of the additives GALAXY, SPOTLIGHT, NIGHT VISION or GOLD or, in the case of a neutral colour, an additive from the METALLIC COLLECTION (Platinum, Shining Gold, Bronze, Copper or Rusty)

Mix again until a uniform mix is obtained. The product is now ready to be applied.

APPLYING STARLIKE DECOR

STARLIKE DECOR can be applied in various ways to give different aesthetic effects to the surface.

4 possible finishes can be obtained as described below.

CLOUDY EFFECT

Level with STARLIKE DECOR using a smooth plastic spatula (Art.103 PRO), ensuring not to leave crinkles or clear marks with it. Apply another layer with the same modality after approx. 24 hours.

COVERING EFFECT

With a smooth plastic spatula, 3 or more applications can be carried out (Art.103 PRO), wait 24 hours before the subsequent application, to obtain a more even colour.

SPATULATED EFFECT

Type of finish: relief structure

Apply irregularly in a thicknesses of 1-2 mm with deliberate imperfections using a smooth plastic spatula. In this case it is the imperfections that determine the decoration.

RANDOM EFFECT

Type of finish: relief structure

Irregularly apply Starlike Decor in relief, using a smooth spatula and making thicknesses from 1 to 2 mm and once it is dry, sand the crinkles to smooth the surface. Remove dust and level with the same colour, or any colour you wish, using a rubber spatula (Art. 104/G).

APPLICATION OF LITUX OR LITOLUX EXTRA POLYURETHANE PROTECTIVE WAXES

When STARLIKE DECOR is used in spaces subject to contact with dirt or liquids such as coffee, wine, oil, etc., LITOLUX or LITOLUX EXTRA polyurethane finishing wax can be applied to give the surface extra protection.

Beyond conferring extra resistance to stains, LITOLUX or LITOLUX EXTRA brightens the colour of the STARLIKE DECOR based finishes, improves the performance of any additive, such as SPOTLIGHT or GOLD, creating a transparent film on the surface.

To apply LITOLUX or LITOLUX EXTRA, refer to the relative technical sheets.

LITOLUX should not be used over STARLIKE DECOR based levelling layers in applications such as saunas or Turkish baths or other areas subject to high temperatures and humidity. In this cases, apply LITOLUX EXTRA.

WARNINGS

- Metallic Collection finishes require at most two coats of product.
- The additives (Spotlight, Galaxy, Gold and Night Vision) may be added solely in the last coat to obtain the desired effect. If also added in the first coat, the effect is further enhanced and greater coverage of the surface is achieved.
- Do not use Galaxy additive to apply Starlike Decor.
- Do not use colours as Absolute White C.470 and ice White C.270 even if mixed with additives.
- Do not use wet equipment or water for levelling with Starlike Decor.

- Do not apply on wet substrates or subject to humidity.
- Do not use cement-based levelling layers, white cement-based adhesives or base coats different from Decor Primer.
- Do not apply on low thickness lime, cement or gypsum-based surface finishes.
- Do not apply on substrates not specified in this technical sheet.
- Before the application on existing tiles, degrease the tiles with denatured alcohol.
- During the winter, hardening time can be significantly longer.
- Surfaces to be coated must have a temperature of at least +15 °C during the application.
- Do not use in very humid environments.
- For applications in saunas or Turkish baths, wait at least 7 days after installation before using the room.
- If the product is used in areas such as showers, cooking tops or other areas exposed to a lot of dirt, it is recommended to use LITOLUX or LITOLUX EXTRA polyurethane finishing wax. It can be applied from 24 hours following application of STARLIKE DECOR, after verifying the degree of hardening. Do not use LITOLUX on levelling layers in areas such as saunas or Turkish baths or other areas subject to high temperatures and humidity. Use LITOLUX EXTRA.
- The maximum stain resistance is achieved after 7 days at 23°C, even after application of LITOLUX or LITOLUX EXTRA. During this time, protect the STARLIKE DECOR based levelling layer from contact with aggressive substances or cleaning products.
- The product applied as a levelling layer is highly sensitive to stains caused by felt-tip pens and coffee. Stains are particularly difficult to remove if LITOLUX or LITOLUX EXTRA is not used.
- Do not use bleach or products containing bleach as they stain STARLIKE DECOR.
- Store the material at room temperature for approx. 24 hours prior to installation.
- For technical and performance characteristics, refer to the technical sheet for LITOKROM STARLIKE[®] epoxy mortar.

Although the information in this technical sheet is source of our best experience, it is merely indicative. Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet n. 316**Revision n. 4****Date: September 2011****LITOKOL S.p.A.**

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy

Tel. +39 0522 622811 Fax +39 0522 620150

www.litokol.it email: info@litokol.it

**COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =**



FINISHING FOR LITOKROM STARLIKE®

DESCRIPTION

The additives GALAXY, SPOTLIGHT, GOLD and NIGHT VISION when mixed together with the two-part epoxy mortar LITOKROM STARLIKE®, enable to get grouts with unique and exclusive effects without prejudicing the ease of cleaning of the product.

These additives are available separately, in pre-batched packages for the 2,5 / 5 Kg LITOKROM STARLIKE® bucket.

GALAXY: this component can be added to any colour of the STARLIKE range to get a "metallic" effect.

In comparison with the original colour without additive, you get a slightly lighter colouring.

SPOTLIGHT: this component can be added to any colour of the STARLIKE range to get a shiny glittering effect.

The original colour doesn't change.

GOLD: this component can be added to any colour of the STARLIKE range to get a glittering golden effect.

The original colour doesn't change.

NIGHT VISION: this component can be mixed with following Starlike colours: Silver, Travertino, Sabbia, Tortora, Turchese, Artico blu, Zaffiro, Lime, Corallo, Lilla, Ciclamino.

It is a luminescent additive that, without changing the original colour of the product, allows to obtain grouts that, after being exposed to sunlight or artificial light, give out in the dark a bluish colour for some hours.

METALLIC COLLECTION: the additives PLATINUM, SHINING GOLD, BRONZE, COPPER and RUSTY when mixed together with the two-part epoxy mortar LITOKROM STARLIKE® in the colour Neutro C.340, enable to get grouts with unique and exclusive effects without prejudicing the ease of cleaning of the product. These additives are available separately in pre-batched packages for the 2,5 / 5 Kg LITOKROM STARLIKE® Neutro C.340.

FIELD OF APPLICATION

Special additives for the two-part epoxy mortar LITOKROM STARLIKE® suitable for grouting floor and wall tiles, gres stoneware, mosaics, clinker in interiors and exteriors such as: bathrooms, kitchens, floors and shops, columns...

MIX PREPARATION

Mix part B (catalyst) with part A (coloured paste) of the 2,5 or 5 Kg bucket LITOKROM STARLIKE® using an electric drill equipped with mixing paddle until a uniform, lump-free mix is obtained.

Pour the third component (GALAXY, SPOTLIGHT, GOLD, NIGHT VISION or the additives of the METALLIC COLLECTION (Platinum, Shining Gold, Bronze, Copper, Rusty), already pre-batched in its package and mix till getting a smooth mixture.

APPLICATION

Introduce the mortar into the joints using a rubber float and clean with water following the instructions on the packaging.

CAUTION

Do not apply the epoxy mortar LITOKROM STARLIKE® mixed with the components GALAXY-SPOTLIGHT-GOLD-NIGHT VISION or with the "metallic collection" components on ceramic surfaces in contact with chemical weapons such as on industrial floorings.

Handle the additives with care since they have a very low specific weight and so are extremely volatile.

If the ceramic tiles are exposed to sunlight or artificial light, the effects you can get with these additives stand out more.

LITOCROM STARLIKE [®] COLOUR RANGE					
COLOURS	FINISHES				
	Galaxy	Spotlight	Gold	Night vision	
CLASSIC COLLECTION BASIC	Bianco assoluto C.470	•	•	•	
	Bianco ghiaccio C.270	•	•	•	
	Titanio C.310	•	•	•	
	Silver C. 220	•	•	•	•
	Ardesia C.480	•	•	•	
	Antracite C.240	•	•	•	
	Grigio C. 280	•	•	•	
	Moka C. 420	•	•	•	
	Pietra d'Assisi C. 300	•	•	•	
	Sabbia C.250	•	•	•	•
	Tortora C.490	•	•	•	•
	Travertino C.290	•	•	•	•
GLAMOUR COLLECTION BASIC	Turchese C.400	•	•	•	•
	Artic blu C.390	•	•	•	•
	Zaffiro C.260	•	•	•	•
	Corallo C.230	•	•	•	•
	Lilla C. 380	•	•	•	•
	Ciclamino C. 370	•	•	•	•
	Melanzana C.360	•	•	•	
	Lime C.440	•	•	•	•
	Mela C.410	•	•	•	
	Limone C. 430	•	•	•	
	Arancio C.460	•	•	•	
	Rosso oriente C. 450	•	•	•	
METALLIC COLLECTION	Neutro C.340	Platinum			
		Shining gold			
		Bronze			
		Copper			
		Rusty			

Although the information provided on this technical sheet represents the best of our knowledge and experience, it is intended purely as a guideline.
The user must carry out preliminary practical tests for each specific job and is solely responsible for the final result.

Sheet n. 311

Revision n. 3

Date: September 2012

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



LITONET/LITONET GEL



LIQUID DETERGENTS TO REMOVE OF RESIDUES OF HALOS OF EPOXY MORTAR FROM ANY KIND OF CERAMIC TILES, MOSAICS AND NATURAL STONE

DESCRIPTION

LITONET and LITONET GEL are two concentrated liquid detergents with an alkaline pH suitable for cleaning all types of ceramic tiles, also delicate ones such as lapped ceramic and glass mosaic or any kind of natural stone, even polished natural stone. As it has a low viscosity LITONET is suitable for cleaning floors, while LITONET GEL, with a higher viscosity is particularly suited for cleaning ceramic wall tiles.

APPLICATION FIELDS

The two detergents used undiluted are particularly effective for removing residues or halos of epoxy mortars such as Litochrom Starlike, Litochrom Starlike Defender and Epoxystuk X90, as well as removing halos on polished porcelain stoneware with stained made with previous work using dark-coloured cement-based sealants. They are effective for the removal of films created by common detergents used for routine maintenance of the surfaces. LITONET diluted from 1:10 to 3:10 in water is ideal for frequent and routine cleaning of resilient dirt. Both cleaners are also recommended when you have the impression that the surface has lost its shine, colour and appears dusty.

APPLICATION

To remove halos or residues of epoxy mortar, detergents should be applied when the grout is sufficiently hard (usually after 24 hours at +20 / +25° C). Apply pure products, not diluted, spreading or spraying them directly on the surfaces leaving them to sit for about 10-15 minutes. Then rub the surface with white felt (art. 109/G) or with a single-brush floor machine equipped with a white pad for large surfaces. Remove the cleaning solution with a sponge, a rubber rake or a machine that collects liquid. Finally, rinse thoroughly with clean water and dry with a towel or a clean cloth. Do not wait for the rinse water to evaporate as halos on the surface would form again. For routine cleaning dilute LITONET from 1:10 to 3:10 in water and repeat the steps above.

WARNINGS

- Before use protect doors, windows, rubber seals, furniture, taps and fittings, metal or PVC profiles and all surfaces that could be affected by direct contact with detergents.
- Change the rinse water frequently.
- The products may cause irritation. Use adequate protective clothing when handling the products. Follow the instructions on the label and the relevant safety data sheets.
- Do not use the products for applications not listed on this technical specification.
- In case of accidental spills, collect the product with an absorbent support (paper, sawdust, vermiculite, etc.) and throw in the most suitable container.

PRODUCT DATA

Description	LITONET Clear liquid
	LITONET GEL Dense clear liquid
Colour	Colourless
Smell	Peach
Flammability	No
Customs classification	3402 90 90
pH	12 ± 0.5
Specific weight	1010 ± 10 g/l
Storage time	24 months in original containers away from heat and direct light. Protect from frost.

APPLICATION DATA

Admitted application temperatures	From +5°C to +35°C
Surface treatment period	approx. 10-15 minutes
Consumption	10-15 m ² /l

PACKAGING	LITONET	LITONET GEL
		1 l bottles – Boxes of 12 pcs 5l tanks

SAFETY INFORMATION In accordance with regulation 1907/2006/CE (REACH), Article 31

Xi – Irritant

R36: Irritating to eyes

R38: Irritating to skin

S2: Keep out of reach of children

S24: Avoid contact with eyes

S25: Avoid contact with skin

S26: In the event of contact with eyes, rinse immediately with plenty of water and seek medical advice

Although the information contained in this data sheet is accurate to the best of our experience, is it only meant as a guide.
Each case must be subject to preliminary practical tested by the user who is responsible for the final result.

Sheet N° 310

Revision N° 2

Dated: July 2011

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



MONOMIX CLEANER GEL

ECOLOGICAL DETERGENT FOR THE REMOVAL OF GROUTING RESIDUES WITH STARLIKE® MONOMIX POLYMER MORTAR

DESCRIPTION

MOMOMIX CLEANER GEL is an ecological, pH neutral detergent, delicate on ceramic surfaces, consisting of ingredients derived from natural agents that are totally biodegradable.

FIELDS OF APPLICATION

MOMOMIX CLEANER GEL is the specific cleaner for removing polymer mortar STARLIKE® MONOMIX grouting resinous residues from the surface of the tiles and glass mosaics. Its special viscosity makes it suitable also for wall applications without dripping. The product is effective against surface residue without damaging the polymer mortar applied in the joints. **MOMOMIX CLEANER GEL** is also suitable as a degreaser of ceramic surfaces in contact with food substances such as kitchen counter-tops.

APPLICATON

The removal of any transparent marks on ceramic or mosaic surfaces due to the formation of a film of resin contained in the STARLIKE® MONOMIX polymer mortar must be carried out at least 24 hours after grouting with the neutral **MOMOMIX CLEANER GEL**. Spread the pure product on the surface and after a few minutes, rub with white felt (art. 109/G), rinse with a moist sponge and dry with a clean cloth. It is recommended to apply **MOMOMIX CLEANER GEL** on surfaces that are not too large (about 1-2 m²) so as not to let it come into contact with the grouting for more than 5-7 minutes.



WARNINGS

- Use the product pure and not diluted
- Cleaning with **MOMOMIX CLEANER GEL** must be carried out at least 24 hours after grouting with STARLIKE® MONOMIX.
- Do not use the product for applications not found in the technical sheet.

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =

IDENTIFICATION DATA

Appearance	Transparent colourless gel
Smell	Characteristic
Specific weight of the mixture	995 ± 10 g/l
pH (5% in water)	6,5-7,5
Custom classification	3402 90 90
Storage time	24 months inside the original packaging closed and in a cool and dry place. Protect from frost.
Consumption	10 m ² / per package

APPLICATION DATA

Equipment	White felt (art. 109/G) and
Application temperatures allowed	From +5°C to +30°C
Waiting time for cleaning	At least 24 hours after grouting with STARLIKE® MONOMIX
Maximum time of contact on grouting	Not more than 5-7 minutes

PACKAGING

0.750 l spray bottles.Boxes with 12 pcs. each.

INFORMATION ON SAFETY

Refer to the product's safety sheets available upon request.

PRODUCT FOR PROFESSIONAL USE

Although the information in this technical chart is source of our best experience, it is merely indicative.

Each specific case must be subjected to preliminary tests by the user who assumes the responsibility for the final outcome of the task.

Sheet No. 321

Revision No. 0

Date: February 2013

LITOKOL®
HI-PERFORMANCE BUILDING PRODUCTS

LITOKOL S.p.A.
Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it



STARLIKE® COLOR CRYSTAL

TWO-COMPONENT COLOURED ACID RESISTANT TRANSLUCENT EPOXY MORTAR FOR THE GROUTING OF ALL TYPES OF GLASS MOSAICS WITH JOINTS OF UP TO 2 mm IN WIDTH



New patented formulation resistant to UV and the weather-climate, in collaboration with the University of Modena and Reggio Emilia

DESCRIPTION

Part A consists of a mixture of epoxy resin, fine particle sized glass-bead based aggregate and rheological components of organic nature. Part B consists of a mixture of amine-based hardeners.

The main features of the product are:

- A translucent colour that allows light filtration.
- A smooth finish thanks to the fine particle sized aggregates.
- Extremely simple application and cleaning.
- High mechanical resistance.
- It does not absorb.
- Absolutely no cracks or crazing after hardening.
- Excellent chemical resistance
- Suitable product for direct contact with food in accordance with Min. Decree of 21.03.1973 (a copy of the certificate can be requested from the Litokol Technical Department).

EN 13888 CLASSIFICATION:

Class RG - Reactive sealant for joints

Packages

2.5 kg plastic bucket Standard pallet 375 kg

FIELDS OF APPLICATION

While Starlike® Crystal is used exclusively for grouting transparent and artistic glass mosaics, with Starlike® ColorCrystal it is possible, after identifying the most suitable colour combination, to achieve "tone on tone" grouting even in the case of non-transparent mosaics, further enhancing the mosaic itself.

The colour range of Starlike® Color Crystal was designed in order to be adaptable to a wide range of mosaics.

In the case of conventional substrates such as cementitious plasters or gypsum-based, panelling, etc., the mosaics must be glued with Litoplus K55 type of white adhesives (class C2TE cementitious adhesive) or Litoelastic (class R2T two-component reactive adhesive) depending on the type of substrate.

Thanks to this feature, Starlike® ColorCrystal allows glass mosaic substrates to be achieved with a significant effect of quality and visual impact such as:

- Floors and tiles in bathrooms, showers, etc.
 - Grouting back painted glass mosaic or made of different materials, such as glass and ceramic.
 - Construction of furnishing surfaces such as columns, tables, etc.
- In the case of transparent glass mosaics, it is possible to create backlit internal walls consisting of transparent substrates in glass or Plexiglas. In this case, fixing will be done with a suitable transparent cartridge adhesive.

PHASES OF APPLICATION

Preliminary checks and preparation of joints

Make sure that the adhesive used for bonding the mosaic is fully hardened and dry.

The joints must be clean, free of dust and the thickness of the mosaic must be empty in order to guarantee a product translucent effect.

It is recommended to use a spatula with small triangular teeth for bonding (Art. 112/D-VVV mm 2).

Mixing proportions

COMPONENT A: 100 parts in weight

COMPONENT B: 8.3 parts in weight

The two components are pre-dosed each in their own packaging.

Preparation of the mix

Cut a corner of the bag containing the catalyst (component B) inside the bucket and pour it on component A (paste). We recommend you pour the entire contents of the catalyst, rolling and squeezing progressively from the sealed side of the bag to the cut side. Mix with the electric drill fitted with a paddle, from the bottom upwards and downwards for a number of revs until an even lump-free mixture is obtained.

With a spatula or trowel, scrape the walls and base of the bucket to avoid any parts of non-catalysed product remnants. It is not recommended to mix by hand.

The packages of the 2 components are previously dosed so as to avoid any mixing errors. The mixture obtained can be worked for approximately 1 hour at approximately +23°C.

Grouting of mosaic surfaces

Introduce the mixture into the joints using the special green rubber trowel (Art. 104/G). In the case of wall application, it is recommended that the sealant is applied in complete vertical strips before cleaning.

Remove excess product with the same rubber trowel. The material must be introduced in the joints before cleaning with water so as to prevent the formation of white crystals on the surface.

The pot life and hardening of the product is significantly affected by the environmental temperature. The optimum temperature for application is between +18 and +23°C.

Under these conditions the product is an easily workable smooth mortar with a mixture life of about 1 hour. The surface can be walked on after 24 hours. At a temperature of +15°C you must wait three days before walking on it. At temperatures between +8 and

+12°C the product is more consistent and more difficult to apply. The hardening time is significantly extended.

It is recommended not to add water or solvents to improve workability. At higher temperatures it is recommended to apply the product as quickly as possible on the substrate in order not to shorten the mixture time further due to the reaction heat in the package.

CLEANING AND FINISHING

Cleaning and finishing of the grouting should be carried out when the product is still fresh, and in any case as soon as possible, taking care not to empty the joints and without leaving product streaks on the surface of the mosaics.

Sprinkle clean water over the grouted surface beforehand. Perform an initial cleaning using the trowel equipped with moistened white felt (Art. 109/G), using circular movements both clockwise and anticlockwise, in order to seal perfectly the sides of the mosaic tiles and to remove the excess sealant from the surface. Then go over it again using the rigid cellulose sponge (Art. 128/G) to obtain a smooth, closed surface, completely removing the product from the mosaic surfaces without removing it from the joints, and drying the excess water.

During this phase, prevent the water from entering the joints that are still empty, interrupting the cleaning process a few centimetres before the empty joints.

When the felt and sponge are full of resin and can no longer be cleaned, they must be replaced.

Any streaks or residues of transparent product can be removed from the mosaic surface after about 24 hours or after the hardening of the joint (depending on the temperature), using the specific cleaning products - Litonet (flooring) and Litonet Gel (claddings).

Read the relative technical data sheet for correct use.

USING LITONET AND LITONET GEL TO REMOVE STREAKS

Apply LITONET or LITONET GEL on the surface that is to be cleaned with the white felt (Art. 109/G). Let the product stand for about 15-30 minutes. Then rub the surface with the white felt.

Rinse with clean water and immediately dry with a clean dry cloth. Do not wait for the rinse water to evaporate as streaks would reform on the mosaic surface.

WARNINGS

- The product can only be applied to grout glass mosaic with joints that are no wider than 2 mm.
- Preferably apply at temperatures between +18°C and +23°C. Avoid applying in low temperatures and high environmental

humidity in order to prevent the formation of superficial carbonation that could alter colour uniformity.

- Prevent the water from entering the joints that are still empty while cleaning, interrupting the cleaning process a few centimetres before the empty joints.
- The material must be introduced in the joints before cleaning with water.
- Avoid rising adhesive in the thickness of the joint as this interferes with the end colour. Even discontinuity in the application of the adhesive can be noted when the grouting is completed.
- Make sure that the equipment used and the mosaic that is to be sealed are cleaned. Any colour interference is noted since it is a translucent product.
- Promptly remove the excess product from the mosaic surface as it can only be removed mechanically once it hardens, which poses high risks for the end result.
- Mix the two components (A+B) correctly.
- Change the rinse water frequently.
- Change the felt and sponge when saturated with product.
- Do not step on the freshly grouted surface so as to prevent damaging the floor with the resin residue.
- Do not cover the surface that has just been grouted with sheets or other material so as to prevent the formation of condensation which would cause superficial product carbonation, thereby altering colour uniformity. Wait at least 24-48 hours before protecting the surface, depending on the temperature.
- The product cannot be used to grout tanks containing aggressive substances which are only allowed for intermittent contact (see the chemical resistance table shown in the technical data sheet).
- Do not mix the product with water or solvents.

CONSUMPTION

1 kg/m² for mosaics 20x20 mm thickness 3 mm (joint = 2 mm)

2 kg/m² for mosaics 10x10 mm thickness 3 mm (joint = 2 mm)

INFORMATION ON SAFETY

See product material safety data sheets, available on request.

PRODUCT FOR PROFESSIONAL USE.

SPECIFICATIONS

The decorative grouting of the joints between glass mosaics, generally applied to the floor or wall indoors or outdoors must be applied with translucent two-component acid resistant epoxy mortar such as Starlike® ColorCrystal of Litokol Spa. The grouting will be smooth and compact, with no cracks, non-absorbent, uniform in colour, UV resistant and weatherproof.

IDENTIFICATION DATA

Appearance	Component A: translucent paste Component B: thick liquid
Colours	Rosso Pompei C.351, Verde Capri C.352, Azzurro Taormina C.353, Noce di Sorrento C.354, Rosa Kyoto C.355
Custom classification	3506 91 00
Storage time	24 months inside the original packaging, in a dry place

APPLICATION DATA

Recommended adhesives to apply mosaics	Substrates made of cement, gypsum-based, old tiles: Litoplus K55 Wood, metal, fibreglass panelling: Litoelastic Plexiglas: Primer 1217 + OTTOCOL M501 transparent Glass: OTTOCOL M501 transparent
Recommended trowel	Small notched trowel (Art. 112/D VVV 2 mm)
Waiting time before grouting	24 hours
Mixing proportion	Component A: 100 parts in weight - Component B: 8.3 parts in weight The two components are pre-dosed each in their won packaging
Consistency of the mix	mushy
Specific weight of the mixture	1.55 kg/l
Mixture life	Approx. 1 hour at T=+23°C
Application temperatures	Allowed: from +12°C to +30°C - Recommended: from +18°C to +23°C
Can be stepped on	24 hours at T=+23°C
Fully usable after	5 days at T=+23°C
Width of the joints	Up to 2 mm

PERFORMANCE

Abrasion resistance (EN 12808-2)	≤ 250 mm ³
Mechanical resistance to bending after 28 days in standard conditions (EN 12808-3)	≥ 30 N/mm ²
Mechanical resistance to compression after 28 days in standard conditions (EN 12808-3)	≥ 45 N/mm ²
Shrinkage (EN 12808-4)	≤ 1.5 mm/m
Water absorption after 4 hours (EN 12808-5)	≤ 0.1 g
Temperature of use	From -20°C to +100°C

TABLE OF THE CHEMICAL RESISTANCES

(The table shown is a summary of the chemical resistance tests carried out according to EN 12808-1)

CHEMICAL RESISTANCE OF CLADDINGS GROUTED WITH STARLIKE® COLOR CRYSTAL

Group	Name	Conc. %	Continuous service				Intermittent service
			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	-	●	●	●	●	●
	Sulfuric acid	1.5	●	●	●	●	●
		50	●	●	●	●	●
96		●	●	●	●	●	
Acido tannico	10	●	●	●	●	●	
Tartaric acid	10	●	●	●	●	●	
Oxalic acid	10	●	●	●	●	●	
Alkali	Ammonia solution	25	●	●	●	●	●
	Caustic soda	50	●	●	●	●	●
	Sodium hypochlorite solution Conc. Active Cl	>10	●	●	●	●	●
		50	●	●	●	●	●
	Caustic potash	50	●	●	●	●	●
	Sodium bisulfite	10	●	●	●	●	●
Saturated solutions at 20°C	Thiosulphate sodium		●	●	●	●	●
	Calcium chloride		●	●	●	●	●
	Sodium chloride		●	●	●	●	●
	Iron chloride		●	●	●	●	●
	Sugar		●	●	●	●	●
Oils and fuels	Gasoline, fuel		●	●	●	●	●
	Turpentine		●	●	●	●	●
	Diesel		●	●	●	●	●
	Extra virgin olive oil		●	●	●	●	●
	Lubricant oil		●	●	●	●	●
Solvents	Acetone		●	●	●	●	●
	Ethylene glycol		●	●	●	●	●
	Glycerin		●	●	●	●	●
	Ethyl alcohol		●	●	●	●	●
	Benzine		●	●	●	●	●
	Oxygenated water	10	●	●	●	●	●
25		●	●	●	●	●	

KEY

- EXCELLENT RESISTANCE
- GOOD RESISTANCE
- LOW RESISTANCE

Although the information in this technical chart is from our best experience, it is merely indicative.

Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet No. 322

Revision No.0

Date: February 2014

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy

Tel. +39 0522 622811 Fax +39 0522 620150

www.litokol.it email: info@litokol.it

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= ISO 9001 =



LITONET PRO

HIGH VISCOSITY LIQUID CLEANER FOR THE REMOVAL OF EPOXY MORTAR STREAKS AND STAINS FROM ALL TYPES OF CERAMIC TILES AND MOSAICS

DESCRIPTION

Litonet Pro is a liquid cleaner with alkaline pH, suitable for the removal of catalysed epoxy streaks, even a long time after grouting, from any type of ceramic tiles, even delicate, such as lapped ceramics, glass or ceramic mosaics and natural stone. Thanks to its high viscosity, Litonet Pro is suitable for cleaning indoor and outdoor floors and walls.

FIELDS OF APPLICATION

When the cleaner is used neat, with its excellent disgregating power, it is particularly effective at removing streaks and stains of epoxy mortar such as Starlike®, Starlike® Defender, Starlike® Crystal, Starlike® Color Crystal and Epoxystuk X90, even on materials that are particularly difficult to clean, such as thin sheets obtained by pressing or compacting, even with a wood effect or micro-rough surfaces. Thanks to its formulation it does not damage the materials and does not generate corrosion.

PACKAGING

0.5 l bottles – Boxes of 12 pcs.

APPLICATION

Shake well before use. Apply the product neat, undiluted, spreading it directly onto the affected area and distributing it evenly with a special swab or brush. The product should be left to work for 15-30 min depending on the hardness of the residues to be removed. The product will take less time on fresh residue and longer contact times may be required for very seasoned residue. Then rub the surface with white felt (art. 109/G) or with a single-

brush floor machine equipped with a white pad for large surfaces. It is advisable to mechanically rub the product during its action to facilitate removal.

Remove the cleaning solution with a sponge or with a wet vacuum cleaner.

Finally, rinse thoroughly with clean water and dry with a towel or a clean cloth.

Do not wait for the rinse water to evaporate as streaks would reform on the surface.

In the event that there are still residues of epoxy stains after rinsing, repeat the application as above.

WARNINGS

- Before use, protect doors, windows, rubber seals, furniture, taps and fittings, metal or PVC profiles and all surfaces that could be affected by direct contact with the cleaner.
- Shake well before use.
- Do not use on epoxy mortar residue. In that case, use LITOSTRIP
- The product is corrosive. Use adequate protective clothing when handling the products.. Follow the instructions on the label and the relevant safety data sheet.
- Do not use the product for applications not found in this technical sheet.
- In case of accidental spills, collect the product with an absorbent support (paper, sawdust, vermiculite, etc.) and throw it in the most suitable container.

IDENTIFICATION DATA

Appearance	Gel Liquid
Colour	White
Smell	Characteristic
Flammability	No
Custom classification	3402 90 90
pH	12 ± 0.5
Specific weight	1120 ± 10 g/L
Preservation time	24 months in the original packaging away from sources of heat and direct exposure to light. Protect from frost.

APPLICATION DATA

Admitted application temperatures	From +5°C to +35°C
Treatment period of the surfaces	approx. 15-30 minutes
Consumption	Approx. 2-3 m ² / 0.5 L

INFORMATION ON SAFETY

Refer to the product's safety sheets available upon request.

PRODUCT FOR PROFESSIONAL USE.

Although the information in this technical chart is from our best experience, it is merely indicative.
Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet No. 323
Revision No.0
Date: February 2014

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
= ISO 9001 =

www.litokol.it



LITOLUX

CERA DE ACABADO POLIURETÁNICA DE ALTA RESISTENCIA BRILLANTE

DESCRIPCIÓN

LITOLUX es una emulsión resinosa cerosa de base poliuretánica lista para el uso. Su viscosidad permite incluso la aplicación vertical. Protege las superficies de las marcas de rotuladores, polvo, suciedad y manchas varias en general. Es muy resistente al tráfico peatonal y le da a la superficie tratada un aspecto más brillante. Además, facilita el mantenimiento ordinario de las superficies tratadas y otorga óptimas propiedades antimanchas. Fácil de limpiar utilizando detergentes neutros. El producto está indicado solo para superficies interiores.

CAMPOS DE APLICACIÓN

El producto es muy versátil y puede emplearse para múltiples aplicaciones como por ejemplo:

- Tratamiento protector de enrasados a base de Starlike DECOR, revoques de cemento, piedras, gres porcelánico natural, semi-pulido, aglomerado opaco, terracota.
- Tratamiento antipolvo de contrapisos de hormigón, pavimentaciones industriales alisadas al cuarzo, nivelados de cemento a base de Litoliv S40 ECO, Litoliv Extra 15 o Litoplan Rapid.

APLICACIÓN

La superficie a tratar debe estar limpia, sin ceras, suciedad o grasa, y debe estar seca. Agitar bien el producto antes del uso.

LITOLUX puede aplicarse con rodillo de pelo corto directamente sobre la superficie y de manera uniforme y fina para obtener una buena protección y un óptimo aspecto estético brillante.

Se aconseja evitar las acumulaciones de producto y dejarlo secar completamente durante por lo menos 6 horas antes de pisar el área tratada. En general, es suficiente una sola aplicación de producto. Para materiales porosos se pueden dar dos manos de producto para obtener un óptimo grado de protección. La segunda mano debe aplicarse después de que se haya secado totalmente la primera (4 - 5 horas aproximadamente). Los equipos utilizados para la aplicación de LITOLUX pueden limpiarse con agua.

MANTENIMIENTO

Para el mantenimiento normal de las superficies, limpiar con detergentes neutros.

ADVERTENCIAS

- Agitar bien el producto antes de usar.
- No aplicar con temperaturas inferiores a +10 °C.
- Utilizar solo en ambientes internos.
- No utilizar en saunas, baños turcos y en condiciones de alta temperatura y fuerte humedad.

DATOS DE IDENTIFICACIÓN	
Aspecto	Líquido lechoso
Color	Blanco
Olor	Característico
Clasificación aduanera	3814 00 90
pH	7-8
Peso específico (T=+20°C)	1,035
Biodegradabilidad	No sujeto a la ley n.º 136
Tiempo de conservación	24 meses en los envases originales en un lugar fresco y seco. Evitar que el producto se congele.

DATOS DE APLICACIÓN	
Temperaturas de aplicación permitidas	De +10 °C a +30 °C.
Tiempo de espera entre la primera y la segunda mano	4 horas aproximadamente
Tiempo de espera para el paso peatonal	6 horas aproximadamente
Consumo	15-18 m ² /litro

CONFECCIONES

Frascos de 1 litro Cajas de 12 piezas

Si bien la información presente en esta ficha técnica son el resultado de nuestra experiencia, su valor es meramente indicativo. Cada caso específico debe ser sometido a pruebas prácticas preliminares por parte del utilizador, quien asume la responsabilidad del resultado final del trabajo.

Ficha n. 525

Rev. n.º 1

Del: Noviembre de 2011

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



LITOLUX EXTRA

HIGH RESISTANCE SOLVENT-BASED POLYURETHANE SHINY FINISHING WAX.

DESCRIPTION

LITOLUX EXTRA consists of a water-hardening solvent-based system with marked resistance to abrasion, scratches and high levels of chemical resistance. It can also be applied vertically. It protects surfaces from felt-tip pen marks, dust, dirt and various stains.

It facilitates regular maintenance of the treated surfaces, and gives excellent stain prevention properties.

The product is suitable for indoor surfaces.

FIELDS OF APPLICATION

The product is very versatile and can be used for many applications such as:

- Protective treatment of Starlike DECOR-based self-levelling products, even in saunas and Turkish baths, cement plasters, stones, natural porcelainised gres, semi-polished, opaque agglomerate, brick.
- Dustproofing of cement screeds, quartz smoothed industrial flooring, Litoliv S40 ECO-, Litoliv Extra 15- or Litoplan Rapid-based cement levelling.

For use in coatings and paints for flooring in workshops, industries, wastewater drainage tanks, other types of tank and for the protection of manufactured articles.

APPLICATION

The surface must be clean, dry and free from wax or dirt. Shake well before use.

Apply LITOLUX EXTRA evenly and in a thin layer with a short-hair roller directly onto the surface in order to obtain a good level of protection and a glossy looking finish. We recommend that you do not apply too much product and that you allow at least 6 hours for the product to dry completely before you walk on the surface.

Usually, a single application of the product is sufficient. For porous materials, you can apply two layers in order to obtain a high degree of protection. The second layer must be applied only after the first one is completely dry (approx. 4-5 hours).

The tools used to apply LITOLUX EXTRA can be cleaned with water.

CLEANING AND MAINTENANCE

For ordinary cleaning of the surface, use neutral detergents

CHEMICAL RESISTANCE

LITOLUX EXTRA is highly resistance to solvents and stable with aqueous solutions and acidic and alkaline agents.

WARNINGS

- Do not add products not in the original mixture.
- Shake the product before use.
- Do not apply at temperatures below +5 °C.

IDENTIFICATION DATA

Appearance	Colourless liquid
Colour	Transparent
Custom code	3814 00 90
Specific weight (T=+20°C)	1.05
Shelf life	6 months in the original packs in a cool, dry place

APPLICATION DATA

Minimum temperature for use	+5°C
Initial hardening time (20 °C)	3 – 4 hours
Complete hardening time (20°C)	7 days
Consumption	4 – 7 m ² /kg

PACKS

1 kg bottle 11 piece box

SAFETY INFORMATION

Xn Harmful

F Highly flammable

Contents:

2-methyl-m-phenylene diisocyanate

4-methyl-m-phenylene diisocyanate

xylene

R11 Highly flammable.

R20/21 Harmful by inhalation and in contact with skin.

R38 Irritating to skin.

R42 May cause sensitisation by inhalation.

R66 Repeated exposure may cause skin dryness or cracking.

R67 Vapours may cause drowsiness and dizziness.

S16 Keep away from sources of ignition - No smoking.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S33 Take precautionary measures against static discharges.

S51 Use only in well-ventilated areas.

Contains isocyanates. See information supplied by the manufacturer

Although the information provided on this technical sheet is accurate to the best of our knowledge and experience, it is intended purely as a guideline. The user must carry out preliminary practical tests for each specific job and is solely responsible for the final result.

Sheet N°527

Rev. n. 1

Date: November 2011

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



DECOR PRIMER

2-COMPONENT EPOXY PRIMER SUITABLE FOR PRIMING SUBSTRATES PRIOR TO THE APPLICATION OF STARLIKE DECOR. INDOOR USE

DESCRIPTION

White 2-component epoxy primer, solvent-free, suitable for levelling on absorbing and non-absorbing substrates before the application of STARLIKE DECOR.

FIELDS OF APPLICATION

Suitable for adjusting and standardising the absorption of substrates, such as raw cement plasters, concrete, gypsum-boards, lightweight panels, wood paneling, existing ceramic tiles or mosaics. Once hardened, it is an ideal base for the subsequent application of STARLIKE DECOR decoration system.

PREPARATION OF THE SUBSTRATE

The surfaces to be treated must be clean, dry, solid, non-powdery and flat. Absorbing substrates such as raw cement plasters, concrete, gypsum-boards and lightweight panels must be treated with PRIMER C.

Existing paints or varnishes must be removed and the substrate treated with Primer C.

Low thickness lime, cement or gypsum based surface finishes must be removed and the substrate treated with Primer C.

In case of application overlaying existing tiles or mosaics, the surfaces must be degreased using denatured alcohol.

PREPARING THE MIXTURE

Transfer all the content of the hardener (component B), inside the bucket containing component A (white paste) and mix using the electric drill equipped with mixing paddle until obtaining a homogeneous and clot-free mixture. With a spatula or trowel, scrape the walls and base of the bucket to avoid that parts of non-catalyzed product remain. It is not recommended to mix by hand. The packages of the 2 components are previously dosed so to avoid any mixing errors. The mixture obtained can be worked for approximately 45 minutes at a temperature of approximately 23°C.

APPLICATION

In case of application on raw cement plasters, concrete, gypsum-boards or lightweight panels, apply the mixture using a smooth steel spatula directly on the substrates pre-treated with Primer C, evenly levelling of approx. 1 mm.

In case of application overlaying existing tiles or mosaics, apply the product directly, making 2 crossed coats (the second coat must be applied after 24 hours from the first one), to obtain a total covering thickness of 2 mm.

The first coat allows obtaining a white surface and even the absorption of the substrate for the subsequent application of STARLIKE DECOR.

Once the first coat is hardened, i.e. after 24 hours from the application, sand manually or using a white or light coloured 60 grit sanding paper.

The sanding has the purpose to remove any crinkles or steps and obtain a smooth surface. Before applying STARLIKE DECOR, remove the dust.

WARNINGS

- Use alcohol or acetone to clean the tools when the product is still fresh.
- Do not apply on wet substrates or subject to humidity.
- Do not apply on existing paints, varnishes or glaze.
- Do not apply on low thickness lime, cement or gypsum-based surface finishes.
- Do not apply on substrates not specified in this technical sheet.
- During the winter, hardening time can be significantly longer.
- Do not use at temperatures below +5°C
- The product in its original packaging, can crystallize at low temperatures. To restore it to the conditions indicated in the specification, heat the container in water bath at 80°C for 2-3 hours, taking care to cool before use.

IDENTIFICATION DATA

Look	Component A: white paste Component B: thick paste
Colour	White
Custom classification	3907 30 00
Preservation time	24 months inside the original packaging, in a dry place

APPLICATION DATA

Application	Steel smooth spatula
Proportions	1 part of component A: 1 part of component B
Admitted application temperatures	From +5°C to +35°C
Mixture life	Approx. 45 min at T=+23°C
Drying time	Approx. 24 hours at T=+23°C
Consumption	Approx. 1 Kg/m ² per mm of thickness

PACKAGING

Overall weight 5 Kg	Component A: 2.5 Kg plastic bucket
	Component B: 2.5 Kg plastic bucket

SAFETY INFORMATION In accordance with regulation 1907/2006/CE (REACH), Article 3

COMPONENT A

Contains: reaction product: bisphenol A-epichlorohydrin epoxy resin (average molecular weight ≤ 700)
2,3-epoxypropyl neodecanoate

Xi Irritant

R 36/38 Irritating to eyes and skin.

R 43 May cause sensitisation by skin contact.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S 2 Keep out of the reach of children.

S 23 Do not breathe gas/fumes/vapour/spray.

S 24/25 Avoid contact with skin and eyes.

S 29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

S 37/39 Wear suitable gloves and eye/face protection.

S 46 If swallowed, seek medical advice immediately and show this container or label.

COMPONENT B

Contains:

3-aminomethyl-3,5,5-trimethylcyclohexylamine

2-piperazin-1-ylethylamine

4-tert-butylphenol

benzyl alcohol

C Corrosive

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

R 43 May cause sensitisation by skin contact.

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S 1/2 Keep locked up and out of the reach of children.

S 9 Keep container in a well-ventilated place.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

Although the information in this technical sheet is source of our best experience, it is merely indicative.
Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet n. 319

Revision n. 0

Date: September 2011

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



LITOCHROM 0-2

HIGH-PERFORMANCE CEMENTITIOUS GROUT FOR CERAMIC TILES WITH JOINTS UP TO 2 mm



DESCRIPTION

Powder cementitious grout consisting of hydraulic binders, inert fillers of selected particle size, polymers, organic additives and pigments.

CLASSIFICATION EN 13888

LITOCHROM 0-2 + 32% WATER

Class CG2

Enhanced cementitious grout with high abrasion resistance and low water absorption

APPLICATION PHASES

PRELIMINARY CHECKS AND JOINT PREPARATION

Check that the tiles do not present problems of cleaning or surface absorption. Check that the adhesive or mortar used to fix the tiles has completely hardened and dried. The joints must be clean, free of powder and empty down to all the tile thickness.

Any adhesive or mortar that has squeezed up inside the joints must be removed. When grouting highly absorbent tiles and in very hot weather, moisten the joints by wiping them with a sponge soaked in water.

USE OF IDROSTUK

In the case of tiled surfaces subject to intense traffic, balconies, terraces, swimming pools, etc., Litochrom 0-2 can be mixed with Idrostuk aqueous dispersion additive as a complete substitute for water. This further increases the performance of the finished grout work.

MIXING RATIOS

LITOCHROM 0-2 5 kg (1 bag)

WATER or IDROSTUK 1,6 L (32%).

MIX PREPARATION

Pour the correct quantity of liquid into a clean container and slowly add the powder. Mix with an electric drill equipped with mixing paddle until a uniform, lump-free mix is obtained. Leave the mix to sit for at least 5 minutes then re-mix briefly for a few seconds.

GROUTING

Pack the grout into the joints using a special rubber float. Pull the float diagonally across the grout joints, taking care to fill the entire depth of the joints right up to the tile surface without leaving voids. Remove excess grout using the rubber float.

CLEANING AND FINISHING

When the grout has lost its plasticity and has become dull (normally after 5 to 10 minutes depending on the absorption of the tiles and climatic

PACKAGING

5 kg plastic bags (boxes of 5) - Standard pallet 900 kg

FIELDS OF APPLICATION

Suitable for grouting floors or walls clad with any kind of ceramic tile, natural stone or vitreous mosaic with joints up to 2 mm wide.

conditions), clean and finish the surface of the joints using a wet stiff cellulose sponge.

Again perform diagonal movements with respect to the joints to avoid the risk of removing any of the grout. If cleaning is performed too soon, i.e. while the grout is still plastic, some of the grout may be pulled out of the joints and the colour of the finished grout work will not be uniform.

The film of dried product that remains on the surface of the tiles can be removed using a dry cloth. If traces of product remain on the surface of the tiles after cleaning, use LITOCLEAN powder acid cleaner or LITOCLEAN PLUS liquid cleaner (read technical sheets) after about 6-7 days of curing. Do not use LITOCLEAN or LITOCLEAN PLUS with materials that are not resistant to acids such as marble and limestone.

CAUTIONS

- Apply the product at temperatures of between +5°C and +35°C.
- Do not add lime or cement to the product.
- Use solely clean water for mixing.
- Excessive quantities of water in the mix may adversely affect the mechanical characteristics of the hardened product and alter the colour of the grout work.
- Moisture rising from the substrate or present in the mortar or adhesive used for fixing the tiles may cause whitish efflorescence to appear.
- Mixes made with different quantities of water may correspond to different colours of the finished grout work.
- Depending on the degree of absorption of the tiles, the colour may be lighter (non-absorbent tiles) or darker (absorbent tiles) than shown on the colour chart.
- Some kinds of tiles (e.g. polished porcelain tile) and natural stone have rough, microporous surfaces, making them susceptible to staining and very difficult to clean. In this case preliminary test applications should be performed. Avoid using grouts with contrasting or excessively dark colours.
- In very hot or windy weather, it is advisable to wet the grouting a few hours after application to improve hydration of the cement contained in the product.
- Do not use for applications not stated on this technical sheet.

APPLICATION DATA

Time before grouting	Floor tile installation with normal-setting adhesive: 24 hours Floor tile installation with fast-setting adhesive: 4 hours Floor tile installation with mortar: 7-10 days Wall tile installation with normal-setting adhesive: 6-8 hours Wall tile installation with fast-setting adhesive: 4 hours Wall tile installation with mortar: 2-3 days		
Mixing ratios	Water or Idrostuk = 32% (1,6 L per 5 kg bag)		
Maturing time	5 minutes		
Mix consistency	Fluid paste		
Specific gravity of mix	1,97 kg/l		
Pot life	About 2 hours		
Application temperature	From +5°C to +35°C		
Time before cleaning	From 5 to 20 minutes depending on absorption and temperature		
Walk on time	24 hours		
Ready for use	7 days		
Joint width	Up to 2 mm		
Consumption	Tile size (cm)	Joint width (mm)	Consumption (kg/m²)
	1 x 1 x 0,4 5 x 5 x 0,4	2	2,4 0,5
	10 x 10 x 0,6 15 x 15 x 0,6	1 - 2	0,18 - 0,36 0,12 - 0,24
	15 x 20 x 0,6 25 x 25 x 1,2	2	0,21 0,29

INFORMATION ON SAFETY

Consult the Material Safety Data Sheet, available on request.
PRODUCT FOR PROFESSIONAL USE.

PERFORMANCE

Abrasion resistance EN 12808-2	< 1000 mm ³
Mechanical flexural strength after 28 days in standard conditions EN 12808-3	> 2,5 N/mm ²
Mechanical compressive strength after 28 days in standard conditions EN 12808-3	> 15 N/mm ²
Mechanical flexural strength after freeze-thaw cycles EN 12808-3	> 2,5 N/mm ²
Mechanical compressive strength after freeze-thaw cycles EN 12808-3	> 15 N/mm ²
Shrinkage EN 12808-4	< 3 mm/m
Water absorption after 30 minutes EN 12808-5	< 2 g
Water absorption after 4 hours EN 12808-5	< 5 g
Temperature of use	From -30°C to +80°C
Resistance to acids	No
Resistance to alkalis	Good

IDENTIFICATION DATA

Appearance	Powder
Colours available	C.00 Bianco
	C.30 Grigio Perla
Classification to EN 13888	CG2 – Enhanced cementitious grout with high abrasion resistance and low water absorption
Customs code	3824 5090
Shelf life	24 months in original packaging in dry place

Per quanto le informazioni riportate in questa scheda tecnica siano il frutto della nostra migliore esperienza, hanno un valore puramente indicativo. Ogni caso specifico deve essere sottoposto a prove pratiche preliminari da parte dell'utilizzatore che si assume la responsabilità dell'esito finale del lavoro.

Sheet n. 300

Revision n. 3

Date: March 2012



LITOCHROM 1-6

**HIGH-PERFORMANCE CEMENTITIOUS GROUT
FOR CERAMIC TILES WITH JOINTS FROM 1 TO 6 mm**



DESCRIPTION

Powder cementitious grout consisting of hydraulic binders, inert fillers of selected particle size, polymers, organic additives and pigments. Available in various sizes (see colour chart).

CLASSIFICATION EN 13888

LITOCHROM 1-6 + 27-28% WATER

Class CG2

Enhanced cementitious grout with high abrasion resistance and low water absorption

PACKAGING

5 kg plastic bags (boxes of 5) - Standard pallet 900 kg

25 kg bag - Standard pallet 1200 kg

FIELDS OF APPLICATION

Suitable for grouting floors or walls in interiors or exteriors clad with joints between 1 and 6 mm. The product consists of a right quantity of water-retaining substances that compensate the absorption of high and middle porous ceramic tiles.

Thanks to these features, Litochrom 1-6 is particularly suitable for single or double-fired ceramic tiles and enables an uniform colour without efflorescences.

Also suitable for vitreous mosaic.

APPLICATION PHASES

PRELIMINARY CHECKS AND JOINT PREPARATION

Check that the tiles do not present problems of cleaning or surface absorption. Check that the adhesive or mortar used to fix the tiles has completely hardened and dried. The joints must be clean, free of powder and empty down to all the tile thickness.

Any adhesive or mortar that has squeezed up inside the joints must be removed. When grouting highly absorbent tiles and in very hot weather, moisten the joints by wiping them with a sponge soaked in water.

USE OF IDROSTUK

In the case of tiled surfaces subject to intense traffic, balconies, terraces, swimming pools, etc., Litochrom 1-6 can be mixed with Idrostuk aqueous dispersion additive as a complete substitute for water. This further increases the performance of the finished grout work.

MIXING RATIOS

LITOCHROM 1-6 5 kg (1 plastic bag)

WATER or IDROSTUK 1,35-1,40 L (27-28%).

LITOCHROM 1-6 25 kg (1 bag)

WATER or IDROSTUK 6,75-7,00 L (27-28%).

MIX PREPARATION

Pour the correct quantity of liquid into a clean container and slowly add the powder. Mix with an electric drill equipped with mixing paddle until a uniform, lump-free mix is obtained. Leave the mix to sit for at least 5 minutes then re-mix briefly for a few seconds.

GROUTING

Pack the grout into the joints using a special rubber float. Pull the float diagonally across the grout joints, taking care to fill the entire depth of the joints right up to the tile surface without leaving voids. Remove excess grout using the rubber float.

CLEANING AND FINISHING

When the grout has lost its plasticity and has become dull (normally after 5 to 20 minutes depending on the absorption of the tiles and climatic

conditions), clean and finish the surface of the joints using a wet stiff cellulose sponge.

Again perform diagonal movements with respect to the joints to avoid the risk of removing any of the grout. If cleaning is performed too soon, i.e. while the grout is still plastic, some of the grout may be pulled out of the joints and the colour of the finished grout work will not be uniform.

The film of dried product that remains on the surface of the tiles can be removed using a dry cloth. If traces of product remain on the surface of the tiles after cleaning, use LITOCLEAN powder acid cleaner or LITOCLEAN PLUS liquid cleaner (read technical sheets) after about 6-7 days of curing. Do not use LITOCLEAN or LITOCLEAN PLUS with materials that are not resistant to acids such as marble and limestone.

CAUTIONS

- Apply the product at temperatures of between +5°C and +35°C.
- Do not add lime or cement to the product.
- Use solely clean water for mixing.
- Excessive quantities of water in the mix may adversely affect the mechanical characteristics of the hardened product and alter the colour of the grout work.
- Moisture rising from the substrate or present in the mortar or adhesive used for fixing the tiles may cause whitish efflorescence to appear.
- Mixes made with different quantities of water may correspond to different colours of the finished grout work.
- Depending on the degree of absorption of the tiles, the colour may be lighter (non-absorbent tiles) or darker (absorbent tiles) than shown on the colour chart.
- Some kinds of tiles (e.g. polished porcelain tile) and natural stone have rough, microporous surfaces, making them susceptible to staining and very difficult to clean. In this case preliminary test applications should be performed. Avoid using grouts with contrasting or excessively dark colours.
- In very hot or windy weather, it is advisable to wet the grouting a few hours after application to improve hydration of the cement contained in the product.
- Do not use for applications not stated on this technical sheet.

APPLICATION DATA	
Time before grouting	Floor tile installation with normal-setting adhesive: 24 hours Floor tile installation with fast-setting adhesive: 4 hours Floor tile installation with mortar: 7-10 days Wall tile installation with normal-setting adhesive: 6-8 hours Wall tile installation with fast-setting adhesive: 4 hours Wall tile installation with mortar: 2-3 days
Mixing ratios	Water or Idrostuk = 27-28% 1,35-1,40 L (1 plastic bag) 6,75-7,00 L (1 bag)
Maturing time	5 minutes
Mix consistency	Creamy
Specific gravity of mix	1,94 kg/l
Pot life	About 2 hours
Application temperature	From +5°C to +35°C
Time before cleaning	From 5 to 20 minutes depending on absorption and temperature
Walk on time	24 hours
Ready for use	7 days
Joint width	From 1 to 6 mm

	Tile size (cm)	Joint width (mm)	Consumption (kg/m²)
Consumption	1 x 1 x 0,4 5 x 5 x 0,4	2	2,39 0,48
	10 x 10 x 0,6 15 x 15 x 0,6	1 - 2 - 4	0,18-0,36-0,72 0,12-0,24-0,48
	15 x 20 x 0,6 25 x 25 x 1,2	2 - 3 - 4	0,21-0,31-0,42 0,29-0,43-0,57
	25 x 33 x 0,8 33 x 33 x 1	3 - 4 - 6	0,25-0,34-0,5 0,27-0,36-0,54
	30 x 45 x 1 45 x 45 x 1,2	4 - 6	0,33 - 0,5 0,32 - 0,48

INFORMATION ON SAFETY

Consult the Material Safety Data Sheet, available on request.

PRODUCT FOR PROFESSIONAL USE.

PERFORMANCE	
Abrasion resistance EN 12808-2	< 1000 mm³
Mechanical flexural strength after 28 days in standard conditions EN 12808-3	> 2,5 N/mm²
Mechanical compressive strength after 28 days in standard conditions EN 12808-3	> 15 N/mm²
Mechanical flexural strength after freeze-thaw cycles EN 12808-3	> 2,5 N/mm²
Mechanical compressive strength after freeze-thaw cycles EN 12808-3	> 15 N/mm²
Shrinkage EN 12808-4	< 3 mm/m
Water absorption after 30 minutes EN 12808-5	< 2 g
Water absorption after 4 hours EN 12808-5	< 5 g
Temperature of use	From -30°C to +80°C
Resistance to acids	No
Resistance to alkalis	Good

IDENTIFICATION DATA			
Appearance	Powder		
Colours available	C.00 Bianco	C.90 Terracotta	C.160 Azzurro Cielo
	C.50 Jasmine	C.200 Wengè	C.170 Crocus
	C.130 Sabbia	C.20 Grigio Chiaro	C.150 Menta
	C.60 Bahama Beige	C.30 Grigio Perla	C.140 Rosa
	C.10 Grigio	C.120 Marrone Chiaro	
	C.80 Caramel	C.40 Antracite	
	Classification to EN 13888	CG2 – Enhanced cementitious grout with high abrasion resistance and low water absorption	
Customs code	3824 5090		
Shelf life	Colours Grey and Anthracite: 12 months (Dir.2003/53/CE-D.M. 10.05.04). Other colours: 24 months in original packaging in dry place		

Per quanto le informazioni riportate in questa scheda tecnica siano il frutto della nostra migliore esperienza, hanno un valore puramente indicativo. Ogni caso specifico deve essere sottoposto a prove pratiche preliminari da parte dell'utilizzatore che si assume la responsabilità dell'esito finale del lavoro.

Sheet n. 309

Revision n. 2

Date: March 2012

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



LITOCHROM 3-15

**HIGH-PERFORMANCE CEMENTITIOUS GROUT
FOR CERAMIC TILES WITH JOINTS FROM 3 TO 15 mm**



DESCRIPTION

Powder cementitious grout consisting of hydraulic binders, inert fillers of selected particle size, polymers, organic additives and pigments. Available in various sizes (see colour chart).

CLASSIFICATION EN 13888

LITOCHROM 3-15 + 18-20% WATER

Class CG2

Enhanced cementitious grout with high abrasion resistance and low water absorption

PACKAGING

5 kg plastic bags (boxes of 5) - Standard pallet 900 kg

25 kg bag - Standard pallet 1200 kg

FIELDS OF APPLICATION

Suitable for grouting floors or walls in interiors or exteriors clad with joints between 3 and 15 mm.

Particularly suitable for natural stones and clinker or gres porcelain ceramic tiles.

APPLICATION PHASES

PRELIMINARY CHECKS AND JOINT PREPARATION

Check that the tiles do not present problems of cleaning or surface absorption. Check that the adhesive or mortar used to fix the tiles has completely hardened and dried. The joints must be clean, free of powder and empty down to all the tile thickness.

Any adhesive or mortar that has squeezed up inside the joints must be removed. When grouting highly absorbent tiles and in very hot weather, moisten the joints by wiping them with a sponge soaked in water.

USE OF IDROSTUK

In the case of tiled surfaces subject to intense traffic, balconies, terraces, swimming pools, etc., Litochrom 3-15 can be mixed with Idrostuk aqueous dispersion additive as a complete substitute for water. This further increases the performance of the finished grout work.

MIXING RATIOS

LITOCHROM 3 – 15: 5 kg (1 bag) - water or Idrostuk 0,9 - 1 L (18-20%).

LITOCHROM 3 – 15: 25 kg (1 bag) - water or Idrostuk 4,5 - 5 L (18-20%).

MIX PREPARATION

Pour the correct quantity of liquid into a clean container and slowly add the powder. Mix with an electric drill equipped with mixing paddle until a uniform, lump-free mix is obtained. Leave the mix to sit for at least 5 minutes then re-mix briefly for a few seconds.

GROUTING

Pack the grout into the joints using a special rubber float. Pull the float diagonally across the grout joints, taking care to fill the entire depth of the joints right up to the tile surface without leaving voids. Remove excess grout using the rubber float.

CLEANING AND FINISHING

When the grout has lost its plasticity and has become dull (normally after 5 to 10 minutes depending on the absorption of the tiles and climatic

conditions), clean and finish the surface of the joints using a wet stiff cellulose sponge.

Again perform diagonal movements with respect to the joints to avoid the risk of removing any of the grout. If cleaning is performed too soon, i.e. while the grout is still plastic, some of the grout may be pulled out of the joints and the colour of the finished grout work will not be uniform.

The film of dried product that remains on the surface of the tiles can be removed using a dry cloth. If traces of product remain on the surface of the tiles after cleaning, use LITOCLEAN powder acid cleaner or LITOCLEAN PLUS liquid cleaner (read technical sheets) after about 6-7 days of curing. Do not use LITOCLEAN or LITOCLEAN PLUS with materials that are not resistant to acids such as marble and limestone.

CAUTIONS

- Apply the product at temperatures of between +5°C and +35°C.
- Do not add lime or cement to the product.
- Use solely clean water for mixing.
- Excessive quantities of water in the mix may adversely affect the mechanical characteristics of the hardened product and alter the colour of the grout work.
- Moisture rising from the substrate or present in the mortar or adhesive used for fixing the tiles may cause whitish efflorescence to appear.
- Mixes made with different quantities of water may correspond to different colours of the finished grout work.
- Depending on the degree of absorption of the tiles, the colour may be lighter (non-absorbent tiles) or darker (absorbent tiles) than shown on the colour chart.
- Some kinds of tiles (e.g. polished porcelain tile) and natural stone have rough, microporous surfaces, making them susceptible to staining and very difficult to clean. In this case preliminary test applications should be performed. Avoid using grouts with contrasting or excessively dark colours.
- In very hot or windy weather, it is advisable to wet the grouting a few hours after application to improve hydration of the cement contained in the product.
- Do not use for applications not stated on this technical sheet.

APPLICATION DATA

Time before grouting	Floor tile installation with normal-setting adhesive: 24 hours Floor tile installation with fast-setting adhesive: 4 hours Floor tile installation with mortar: 7-10 days Wall tile installation with normal-setting adhesive: 6-8 hours Wall tile installation with fast-setting adhesive: 4 hours Wall tile installation with mortar: 2-3 days		
Mixing ratios	Water or Idrostuk = 18 – 20 % (0,9 – 1 L per 5 kg bag) (4,5 – 5 L per 25 kg bag)		
Maturing time	5 minutes		
Mix consistency	Creamy		
Specific gravity of mix	2,02 kg/l		
Pot life	About 2 hours		
Application temperature	From +5°C to +35°C		
Time before cleaning	From 5 to 20 minutes depending on absorption and temperature		
Walk on time	24 hours		
Ready for use	7 days		
Joint width	From 3 to 15 mm		
Consumption	Tile size (cm)	Joint width (mm)	Consumption (kg/m²)
	10 x 10 x 0,6 15 x 15 x 0,6	4 - 6	0,84-1,26 0,56-0,84
	15 x 20 x 0,6 25 x 25 x 1,2	4 - 6 - 8	0,49-0,74-0,98 0,67-1,01-1,35
	25 x 33 x 0,8 33 x 33 x 1	4 - 8 - 10	0,39-0,79-0,99 0,42-0,85-1,06
	30 x 45 x 1 45 x 45 x 1,2	4 - 10 - 12	0,39-0,97-1,17 0,37-0,93-1,12
	50 x 50 x 1,2 60 x 60 x 1,2	6 - 12 - 14	0,5-1,01-1,18 0,42-0,84-0,98

INFORMATION ON SAFETY

Consult the Material Safety Data Sheet, available on request.

PRODUCT FOR PROFESSIONAL USE.

PERFORMANCE

Abrasion resistance EN 12808-2	< 1000 mm ³
Mechanical flexural strength after 28 days in standard conditions EN 12808-3	> 2,5 N/mm ²
Mechanical compressive strength after 28 days in standard conditions EN 12808-3	> 15 N/mm ²
Mechanical flexural strength after freeze-thaw cycles EN 12808-3	> 2,5 N/mm ²
Mechanical compressive strength after freeze-thaw cycles EN 12808-3	> 15 N/mm ²
Shrinkage EN 12808-4	< 3 mm/m
Water absorption after 30 minutes EN 12808-5	< 2 g
Water absorption after 4 hours EN 12808-5	< 5 g
Temperature of use	From -30°C to +80°C
Resistance to acids	No
Resistance to alkalis	Good

IDENTIFICATION DATA

Appearance	Powder
Colours available	C.10 Grigio
	C.30 Grigio Perla
	C.40 Antracite
	C.60 Bahama Beige
	C.80 Caramel
Classification to EN 13888	CG2 – Enhanced cementitious grout with high abrasion resistance and low water absorption
Customs code	3824 5090
Shelf life	Colours Grey and Anthracite: 12 months (Dir.2003/53/CE-D.M. 10.05.04). Other colours: 24 months in original packaging in dry place

Per quanto le informazioni riportate in questa scheda tecnica siano il frutto della nostra migliore esperienza, hanno un valore puramente indicativo. Ogni caso specifico deve essere sottoposto a prove pratiche preliminari da parte dell'utilizzatore che si assume la responsabilità dell'esito finale del lavoro.

Sheet n. 302

Revision n. 4

Date: March 2012

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



EPOXYSTUK X90



TWO- PART ACID-RESISTANT EPOXY MORTAR FOR INSTALLATION AND GROUTING OF CERAMIC TILES WITH JOINT WIDTHS BETWEEN 3 AND 10 mm

DESCRIPTION

Two-part anti-acid epoxy mortar. Part A consists of an epoxy resin mixture, siliceous aggregates and additives.
Part B consists of a mixture of organic catalysts.

CLASSIFICATION EN 13888

EPOXYSTUK X90 Class RG Reactive grout

CLASSIFICATION EN 12004

EPOXYSTUK X90 Class R2T

Enhanced reactive adhesive with zero vertical slip

PACKAGING

5 kg plastic bucket – Standard pallet 450 kg

10 kg plastic bucket – Standard pallet 400 kg

FIELDS OF APPLICATION

Suitable for acid-resistant installation and grouting of floor and wall tiles and mosaic in interiors and exteriors with grout joints between 3 and 10 mm wide. Suitable for applications where the surfaces are exposed to aggressive chemical substances (see chemical resistance table) such as dairies, abattoirs, pubs, food factories in general.

It is also recommended for grouting swimming pools and tanks, containing thermal or brackish water.

PRELIMINARY CHECKS AND JOINT PREPARATION

Check that the tiles do not present problems of cleaning or surface absorption. Some kinds of tiles (e.g. polished porcelain tile) and natural stone have rough, microporous surfaces, making them susceptible to staining and very difficult to clean. In this case preliminary application checks should be performed. Avoid using grouts with contrasting or excessively dark colours.

Check that the adhesive or mortar used to fix the tiles has completely hardened and dried.

The joints must be clean, free of powder and empty down to all the tile thickness.

Any adhesive or mortar that has squeezed up inside the joints must be removed.

MIXING RATIOS

PART A: 100 parts by weight PART B: 8 parts by weight

The two parts are pre-batched in their respective containers

MIX PREPARATION

Pour part B (catalyst) contained in the plastic bag onto part A (paste). Be sure to pour on the entire contents of the catalyst. Mix using an electric drill equipped with mixing paddle until a uniform, lump-free mix is obtained. Scrape the sides and the bottom of the container, using a steel spatula, to make sure that all the paste is catalyzed.

Hand mixing is not recommended.

The two parts are pre-batched in their packaging, avoiding, this way, all risk of mixing errors.

GROUTING

Introduce the paste into the joints using a special green rubber float (art. 104/G).

For large surfaces, an electric single-brush floor maintenance machine equipped with an abrasion-resistant rubber scraper can be used. Remove excess product using the rubber float.

The product's pot life and hardening time is strongly dependent on the ambient temperature.

The ideal temperature for application is between +18 and +23°C.

In these conditions the product is an easily workable smooth mortar, with a pot life of about 1 hour.

It is ready for foot traffic after 24 hours.

At a temperature of +15°C it takes three days before the surface is ready for foot traffic.

The floor is ready to use and resistant to chemicals after 5 days at a temperature of +23°C and after 10 days at a temperature of +15°C.

At temperatures between +8 and +12°C, the product is very dense and difficult to apply.

The hardening time is also lengthened considerably. Do not add water or solvents to improve workability.

In hot weather it is advisable to apply the product to the floor as quickly as possible so as not to shorten further the pot life due to the reaction heat in the container. This applies in particular to the 10 kg container.

CLEANING AND FINISHING

The grout work must be cleaned and finished while the product is still wet and in any case in the shortest possible time.

Take care not to remove product from the joints or leave stains on the tile surface.

Cleaning and finishing can be performed either manually or using an electric single-brush machine equipped with a felt disc

MANUAL METHOD

First sprinkle clean water over the grouted surface. If necessary, perform initial cleaning using a float equipped with a moistened white felt (art. 109/G).

Make circular movements in both clockwise and anticlockwise directions in order to seal perfectly the sides of the tiles and to remove excess grout from the surface of the tiles.

Now perform a second pass with a sweepex sponge (art. 128/G) in order to obtain a smooth, closed surface and to remove completely the product from the surface of the tiles, without removing it from the joints, as well as to dry off the excess of water.

When the felt and sponge are impregnated with resin and can no longer be used, they must be replaced.

METHOD WITH SINGLE-BRUSH MACHINE

After removing excess grout from the surface, sprinkle plenty of clean water over the grouted surface. Now commence cleaning using the single-brush machine equipped with a felt disc. Replace the felt disc when it is impregnated with product.

USE AS ADHESIVE

Apply to the substrate using a trowel with suitable notch size, then position the tiles and press firmly into place.

CAUTIONS

- If possible, apply the product at temperatures between +18°C and +23°C.
- The white coloured product tends to take on an ivory shade over time.
- Remove excess product from the tile surface rapidly because once hardened it will have to be removed mechanically, seriously jeopardising the finished result.

- Do not use for grouting Tuscan terracotta.
- Some kinds of tiles (e.g. polished porcelain tile) and natural stone have rough, microporous surfaces, making them susceptible to staining and very difficult to clean. In this case preliminary test application should be performed. Avoid using grouts with contrasting or excessively dark colours.
- Unglazed clinker must be grouted solely with the Bahama Beige colour product.
- The product must not be used for grouting tanks containing aggressive substances with which only occasional contact is permitted (see chemical resistance table).
- Do not mix the product with water or solvents.
- Thin ceramic stoneware obtained through compaction and with structured faux wood surfaces can present problems for the removal of halos. In these cases, it is recommended to perform a preventive sample application or consult the Litokol technical office.
- Do not use for applications not stated on this technical sheet.

IDENTIFICATION DATA

Appearance	Part A: thick paste Part B: dense liquid
Colours available	C.00 Bianco
	C.30 Grigio Perla
	C.15 Grigio Ferro
	C.60 Bahama Beige
Classification to EN 13888	Class RG -Reactive grout
Classification to EN 12004	Class R2T Enhanced reactive adhesive with zero vertical slip
Customs code	3506 91 00
Shelf life	24 months in original packaging in dry place

PERFORMANCE

Shear adhesion strength EN 12003	Initial	≥ 2 N/mm ²
	After immersion in water	≥ 2 N/mm ²
	After thermal shock	≥ 2 N/mm ²
Abrasion resistance (EN 12808-2)		≤ 250 mm ³
Mechanical flexural strength after 28 days in standard conditions (EN 12808-3)		≥ 30 N/mm ²
Mechanical compressive strength after 28 days in standard conditions (EN 12808-3)		≥ 45 N/mm ²
Shrinkage (EN 12808-4)		≤ 1,5 mm/m
Water absorption after 4 hours (EN 12808-5)		≤ 0,1 g
Temperature of use		From -20°C to +100°C
Chemical resistance		See table

APPLICATION DATA

Time before grouting	Floor tile installation with normal-setting adhesive: 24 hours			
	Floor tile installation with fast-setting adhesive: 4 hours			
	Floor tile installation with mortar: 7-10 days			
	Wall tile installation with normal-setting adhesive: 6-8 hours			
Mixing ratios	PART A: 100 parts by weight			
	PART B: 8 parts by weight			
	The two parts are pre-batched in their respective containers			
Mix consistency	Creamy			
Specific gravity of mix	1,55 kg/L			
Pot life	About 1 hour at T=+23°C			
Permitted application temperatures	From +12°C to +30°C			
Recommended application temperatures	From +18°C to +23°C			
Walk on time	24 hours at T=+23°C			
Ready for use	5 days at T=+23°C			
Joint width	From 3 to 10 mm			
Consumption	Tiles size (cm)	Joint widths (mm)	Consumption (kg/m²)	
	Klinker	12X24X1,2 25X25X1,2	5-8-10	1,16-1,86-2,33 0,74-1,19-1,49
		10 x 10 x 0,6 15 x 15 x 0,6	3-4-6	0,56-0,74-1,12 0,37-0,50-0,74
	15 x 20 x 0,6 25 x 25 x 1,2	3-4-6-8	0,33-0,43-0,65-0,87 0,45-0,60-0,89-1,19	
	25 x 33 x 0,8 33 x 33 x 1	4-8-10	0,35-0,70-0,87 0,38-0,75-0,94	
	30 x 45 x 1 45 x 45 x 1,2	4-10	0,34-0,86 0,33-0,83	
	50 x 50 x 1,2 60 x 60 x 1,2	6-10	0,45-0,74 0,37-0,62	

CHEMICAL RESISTANCE TABLE

(the table is a summary of the chemical resistance proof made according to regulation UNI EN 12808)

CHEMICAL RESISTANCE ON 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	●	●	●	●	●
	Oleic Acid	-	●	●	●	●	●
	Sulphuric Acid	1,5	●	●	●	●	●
		50	●	●	●	●	●
		96	●	●	●	●	●
	Tannic Acid	10	●	●	●	●	●
Tartaric Acid	10	●	●	●	●	●	
Oxalic Acid	10	●	●	●	●	●	
Alkalis	Ammonia in solution	25	●	●	●	●	●
	Caustic Soda	50	●	●	●	●	●
	Sodium Hypochlorite Conc. Cl active	>10	●	●	●	●	●
	Caustic Potash	50	●	●	●	●	●
	Sodium Bisulphite	10	●	●	●	●	●
Concentrated solutions 20°C	Iposulphite Sodium		●	●	●	●	●
	Calcium Chloride		●	●	●	●	●
	Sodium Chloride		●	●	●	●	●
	Ferric Chloride		●	●	●	●	●
	Sugar		●	●	●	●	●
Oils and fuels	Petrol, Fuels		●	●	●	●	●
	Turpentine		●	●	●	●	●
	Gas Oil		●	●	●	●	●
	Olive Oil		●	●	●	●	●
	Lube Oil		●	●	●	●	●
Solvents	Acetone		●	●	●	●	●
	Ethylene Glycol		●	●	●	●	●
	Glycerine		●	●	●	●	●
	Ethyl Alcohol		●	●	●	●	●
	Solvent Petrol		●	●	●	●	●
	Peroxide Water	10	●	●	●	●	●
25		●	●	●	●	●	

KEY

● EXCELLENT RESISTANCE ● GOOD RESISTANCE ● POOR RESISTANCE

SAFETY INFORMATION

Consult the Material Safety Data Sheet, available on request.
PRODUCT FOR PROFESSIONAL USE.

Although the information in this technical sheet is source of our best experience, it is merely indicative.

Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet n.305

Revision n.4

Date: August 2012

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy

Tel. +39 0522 622811 Fax +39 0522 620150

www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



LITOCLEAN

ACID CLEANER FOR FLOOR AND WALL TILES

DESCRIPTION

Concentrated organic acid based cleaner in powder. The product has a similar stain-removing capacity to that of strong acids (muriatic, hydrochloric, sulphuric) but without releasing toxic or noxious fumes.

PACKAGING

5 kg bucket – boxes of 4 pcs.
1 kg bucket – boxes of 24 pcs

FIELDS OF APPLICATION

Suitable for removing the following from ceramic floor and wall tiles in interiors and exteriors:

- Stain of cement and lime;
- Cementitious adhesive or grout residues, even if coloured;
- Efflorescence in grout joints;

Also suitable for removing efflorescence and saltpetre from cementitious plaster and concrete.

PRELIMINARY CHECKS AND SURFACE PREPARATION

Make sure that the surface to be treated is resistant to acids. If in doubt, carry out preliminary tests. Protect all surrounding materials that may be damaged by splashes of acid. Porous surfaces such

as Tuscan terracotta, cementitious plaster and concrete must be soaked to saturation with water before treatment.

APPLICATION

Wet the surface to be treated with clean water, filling cementitious grout joints to saturation. Sprinkle the product uniformly over the surface and leave it to act for about 5 minutes. Clean the surface using a float with felt pads or an abrasive sponge to remove incrustations. Remove the acid solution from the floor using a sponge or rubber rake and rinse with plenty of clean water. If there are persistent incrustations or stains, repeat the operation. In the case of wall tiles, dissolve the product in water at a concentration of about 10% before using.

CAUTIONS

Do not use to clean consisting of marble, travertine, reconstituted stone, limestone, or cement agglomerate.

Do not use on ceramic tiles that are not resistant to acids. If in doubt, carry out preliminary tests.

Use suitable personal protection equipment such as gloves and glasses (see safety information).

Do not use for applications not stated on this technical sheet.

IDENTIFICATION DATA

Appearance	White powder
Active substance	100%
Customs code	2811 1900
Shelf life	24 months in original packaging in dry place

APPLICATION DATA

Application temperature	From +5°C to +40°C
Surface treatment time	About 5 minutes
Consumption	1 kg per 6 – 10 m ²

Although the information in this technical sheet is source of our best experience, it is merely indicative. Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet n. 306

Revision n. 3

Date: March 2012

INFORMAZIONI SULLA SICUREZZA

Consult the Material Safety Data Sheet, available on request.

PRODUCT FOR PROFESSIONAL USE.



LITOCLEAN PLUS

LIQUID ACID CLEANER FOR CLEANING FLOOR AND WALL CERAMIC TILES

DESCRIPTION

LITOCLEAN PLUS is an inhibited liquid acid cleaner.

The product is excellent to remove cement and grout residues without developing toxic or noxious fumes.

The product has been formulated with surface-active agents to remove any kind of cement residues.

PACKING

1 L bottle (12 per box)

5 L can (4 per box)

APPLICATION FIELDS

Suitable for removing cement and grout residues, lime and tempera, salt and calcareous residues from ceramic tiles, porcelain stoneware, glass mosaics, Cotto, aged marble...

The product, if used correctly, doesn't cause any damage to the grout and allows to remove eventual efflorescences giving again a uniform colour to the grout.

APPLICATION

On absorbent surfaces such as cotto or cement structures, it is necessary to treat the surface with a water-repellent impregnating agent before the application.

TECHNICAL DATA	
Appearance	Limpid liquid
Colour	Straw-coloured
Odour	Slightly scented
Customs code	3402 9090
PH (5% solution)	1,5-1,8
Specific gravity (T= +20°C)	1090 - 1120 g/cc
Biodegradability	90% (art.2 e 4 L. 26/04/83 n.136)
Shelf life	24-36 months in original sealed packing kept in cool and dry place. It cannot stand the frost.

APPLICATION DATA	
Application temperatures	From +5°C to +35°C
Open time	5-10 minutes
Consumption	5-20 m ² / litro

Dilute the product from 1:5 to 1:10 with water depending on the residues to be removed.

Spread the solution on the surface to be cleaned. Let it stand for 5-10 minutes, scrub with a pad and remove all residues and stains.

Vacuum up all liquid residues with mops, rubber rake or with wet vacuum.

Rinse well with clean water and dry.

CAUTIONS

- In case of grouted surfaces , it is necessary to wait 7 days before cleaning with LITOCLEAN PLUS.
- For cleaning brushed marble ,dilute the product 1:10 in water; while for cleaning sieved marble dilute the product 1:3.
- Do not use the product on polished marble or other polished materials because they could lose their brightness.
- In case of doubt, carry out preliminary tests on a area not in sight.
- Before use protect taps and fittings, doors, windows, rubber trimmings, furniture and all the surfaces that could be damaged by the contact with the product.
- When handling the product use protective equipment (gloves, rubber shoes and glasses).
- Follow the instructions of the safety data sheet.

SAFETY INFORMATION

Consult the Material Safety Data Sheet, available on request.

PRODUCT FOR PROFESSIONAL USE.

Although the information provided on this technical sheet is accurate to the best of our knowledge and experience, it is intended purely as a guideline. The user must carry out preliminary practical tests for each specific job and is solely responsible for the final result.

Sheet n. 312

Revision n. 2

Date: March 2012

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



LITOCOLOR

COLOURED TREATMENT FOR CEMENTITIOUS JOINTS

DESCRIPTION

LITOCOLOR is a polyurethane paint ready to use, coloured, for the waterproofing treatment idro-oleo repellent of cement escapes.

PACKAGING

Pots 1 litre

FIELD OF APPLICATION

Indicated for the superficial treatment of cement escapes that show a colouring not uniform, in order to bestow on the same escapes a homogeneous colour.

Appropriate for applications both inside and external in floor and wall.

PRELIMINARY VERIFICATION AND PREPARATION OF ESCAPES

Make sure first of all the escapes to treat be clean, dry, compact, not spolveranti and that there isn't presence of humidity in risalita. Before the treatment is necessary that be the use mortar for the pose of the ceramics, that the cement stuccoing had complete the cycle of maturation. Prospective efflorescence or residuals of stuccoing went remove through a sour wash in base of LITOCLEAN or LITOCLEAN PLUS (read relative specifications). Than the wash, when the escapes will result completely dry, you will can go ahead with the treatment in base of LITOCOLOR.

APPLICATION

Coalesce accurately the product contained in the pot with a wire slice at the beginning of the work and during the application, for guarantee a perfect homogeneity of the colour. Not apply the product with temperature lower than +10 C or higher than +25 C.

In the case of applications in external with warm climate, advise to utilize the product just in the first hours of the morning.

In this way will avoid unpleasant inconvenient due to too rapid drying up of the product, that for this reason remained all on the surface without penetrate in depth and without guarantee an able adherence and stability in the time.

Apply a first hand with flat brush (choose the dimension in operation of the generosity of the escapes) and finish the first hand, apply directly the second hand wet over wet.

The number of the hand necessary for obtain a good cover, depends from the permeability and from the colour of the escapes, and from the colour of the treatment selected.

On the average consider sufficient the two hand.

The product leaks on the border of the lies must be immediately remove with a duster cloth before the drying up. The operation may be easier if the duster cloth comes lightly humid with methylated spirits.

The application in excess of the product in the escapes, could be produce a sudden degradation of the treatment, we advise therefore, in case apply too material, to remove immediately with cloth of dry cotton.

The escapes treat with LITOCOLOR will can be pedonabili then 24 hours.

Explain whatever that the complete maturation will have then about 5-7 days.

We advise so to avoid for the first time to drag tools or weigh furniture over the surface.

For the cleaning of the floor will can utilize detergent suitable at the same floor, with warning of not utilize products that contain solvent.

WARNING

Don't apply the product in case of lies or natural stone with absorb surfaces type poached tuscan. In this case the product comes preoccupied also from the lies give back impossible the removal.

In cases doubt make a preliminary proof.

Apply the product with temperatures included between +10C and +25C .

Don't use the product for applications not relate on the present specifications.

For the cleaning of the tools utilize methylated spirits or nitro paint thinner.

Don't append water or solvents to the product.

The final shade of the product apply can differ lightly from the paint of case in function of permeability of the support.

IDENTIFICATION DATA

Aspect	Fluid
Smell	Distinctive
Colour	Are available all colouring of the range of the cement sealing Litochrom 0-2, 1-6, 3-15 and any paint RAL and NCS on request
Flammability	Yes
Customs classification	3208 9091
Time of preservation	12 month in the original packaging

APPLICATIONS DATA

Application	Flat brush
Temperature of permission application	From +10°C to +25°C
Time of drying up	6-8 hours
Walk on time	24 hours
Ready for use	5-7 days
Consumption	Roughly 1 litre for 50/60 m ² of ceramic shape with formed 25x25 cm

SAFETY INFORMATION

Consult the Material Safety Data Sheet, available on request.
PRODUCT FOR PROFESSIONAL USE.

Although the information in this technical sheet is source of our best experience, it is merely indicative.

Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet n.532

Revision n.2

Date: March 2012

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it



REVITAL JOINTS&TILES

SOLVENT BASED PROTECTIVE PRODUCT WITH TONALISER EFFECT TO ENHANCE THE TONE OF CERAMIC OR NATURAL STONE SURFACES AND FOR LEAKS MADE WITH EPOXY AND CONCRETE SEALANT

DESCRIPTION

REVITAL Joints and Tiles is a solvent based stain-resistant protective product used to intensify the colour of ceramic or natural stone coatings and to restore the colour of leaks made with epoxy or concrete sealant, characterised by the appearance of efflorescence.

The materials treated with Revital Joints and Tiles have a slightly polished effect and are protected against oil, grease, dirt, drinks, etc. The product resists to UV rays and can, therefore, be used indoor and outdoor, on reasonably dry material.

The application facilitates the routine maintenance reducing the superficial friction and preventing dirt from penetrating.

FIELDS OF APPLICATION

Suitable for treating medium/high absorbing surfaces and very compact ones like, for example, natural stones even old-looking, pebbly and polished and smooth surfaces, polished porcelain grès, floor leaks and coatings realised with epoxy or concrete sealant.

The product dries in a few hours and guarantees excellent long-lasting duration without creating superficial film.

APPLICATION

Using a fleece, brush or roller, apply a thin and even film of pure product on to clean and dry surfaces.

After application wait for 5-10 minutes before removing the excess product from the surface, using a traditional single-brush floor machine and white buffer or with an absorbing cloth.

After having completed the removal phase, wait at least 6 hours before opening the treated area to traffic.

WARNINGS

- It is important to apply the recommended quantities and carefully remove any superficial excesses within the recommended time to avoid greasiness problems. Always carry out a preventive test to evaluate the result.
- Only apply the product on to clean and dry surfaces.
- Avoid washing the surfaces within 24 hours following the treatment. To wait 48 hours ensures the product tenaciously fixes to the support for a longer lasting effect in years.
- Do not use the product for applications not found in the technical sheet.
- In case of accidental leaks, absorb the product with absorbing support (paper, sawdust, vermiculite, etc.) and throw away in the most suitable container.

IDENTIFICATION DATA

Look	Transparent liquid
Colour	Colourless
Smell	Organic solvent
Flammability	Yes
Custom classification	3824 90 97
Specific weight	850 ± 20 g/l
Flash point	+30°C
Preservation time	24 months in the original packaging away from heat sources and direct exposure to light.

APPLICATION DATA

Admitted application temperatures	From +5°C to +35°C
Treatment period of the surfaces	approx. 5-10 minutes
Consumptions	15-20 m ² /l
Packages	1l Metal bottle

INFORMATION ON SAFETY pursuant to regulation 1907/2006/CE (REACH), Article 31**Xn TOXIC****R10:** Flammable**R65:** Can cause damages to lungs in case of ingestion**R66:** Exposure to vapours can cause the skin to dry and chap**S2:** Keep out of the reach of children**S23:** Do not inhale the vapours**S24:** Avoid contact with eyes**S25:** Avoid contact with skin**S37:** Use suitable gloves

Although the information in this technical sheet is source of our best experience, it is merely indicative.
Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result.

Sheet n. 531

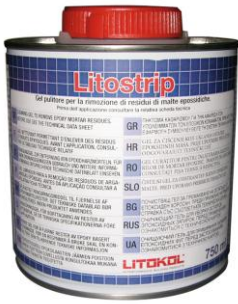
Revision n. 0

Date: August 2011

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



LITOSTRIP

CLEANING GEL TO REMOVE EPOXY MORTAR RESIDUES

DESCRIPTION

LITOSTRIP is a clear gel consisting of a mix of solvents easily applied with a squeegee or a brush on horizontal and vertical surfaces

FIELDS OF APPLICATION

LITOSTRIP is a product designed to completely remove hardened LITOKROM STARLIKE® or EPOXYSTUK X90 based epoxy grouting residues within gaps, or stains that are present on the ceramic surface due to incorrect or incomplete cleaning.

APPLICATION

The product is ready to use and does not need to be diluted. Apply a thin layer evenly on the affected area using a brush or steel trowel. Leave to work until the residues become soft and ready to be easily removed. Usually, 10-20 minutes are enough; in case of tough marks and grout residues leave for 1-8 hours.

Afterwards, remove the epoxy mortar residues using the steel trowel. Use a clean dry cloth to remove the gel and rinse with

plenty of clean water. If necessary, repeat the cleaning process twice.

WARNINGS

- Do not dilute the product with water or solvents
- Do not use if the surface to be treated is not resistant to solvents, for example: plastic materials, PVC, linoleum, enamel, etc.
- When applied to polished tiles and polished natural stone, test the product on a small area first to check that it doesn't damage the finish
- Handle the product with care as it is extremely flammable
- Do not smoke during use
- Read the Safety Card before use
- In case of spillage, isolate the area and try to pick up as much of the product as possible and reuse it. Rinse the area with water

PACKAGING

0.75 litre metal containers

IDENTIFICATION DATA

Appearance	Gel
Colour	Clear
Odour	Unique to product
Custom code	3814 00 90
Flammability	Yes
Shelf life	24 months in original packaging in a cool dry place

APPLICATION DATA

Waiting time to remove marks	Marks: 10-20 minutes Hardened grouting: 1-8 hours
Application temperature	From +5°C to +35°C
Consumption	Variable, depending on use. On average approx ca 0.1-0.3 l/m ²

SAFETY INFORMATION

Consult the Material Safety Data Sheet, available on request.

PRODUCT FOR PROFESSIONAL USE.

Although the information provided on this technical sheet represents the best of our knowledge and experience, it is intended purely as a guideline.
The user must carry out preliminary practical tests for each specific job and is solely responsible for the final result.

Sheet n. 313

Revision n. 2

Date: March 2012

LITOKOL S.p.A.

Via G. Falcone, 13/1 42048 Rubiera (RE) Italy
Tel. +39 0522 622811 Fax +39 0522 620150
www.litokol.it email: info@litokol.it

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= ISO 9001:2008 =



LITOJOINT SUPERFLEX

TWO-PART ELASTIC GROUT FOR TILE SAMPLE BOARDS

DESCRIPTION

Two-part silicone –based grout available in various colours and fine granulometry. When hardened it maintains a high degree of elasticity and is capable of withstanding stresses including mechanical or thermal shock, vibration, etc. without cracking or detaching from the sides of the tiles. The product is very quick to use and involves minimal wastage. Since it is so easy to clean, the panels do not need to be washed afterwards with water so working times are considerably reduced.

PACKAGING

20 kg box (containing 2 bags consisting of 10 kg paste and 1 bottle of 100 g of catalyst)

FIELD OF APPLICATION

Suitable for grouting tiles installed on sample boards or showroom displays. Also suitable for grouting tiled floors in exhibition stands, where the unique and precarious nature of the substrate requires a high degree of elasticity and practicality of use.

PRELIMINARY CHECKS AND JOINT PREPARATION

The joint must be clean, dry, free of dust empty.

MIXING RATIOS

Litojoint Superflex: 10 kg (1 bag) - Catalyst: 50 g (1/2 bottle)

MIX PREPARATION

Mix the paste with the catalyst by hand or using a mixing machine. Workability time is about 6-8 hours. Final hardening takes 48 hours.

IDENTIFICATION DATA			
Appearance	Part. A: thick paste Part B: liquid catalyst		
Colours available	Bianco	Antracite	Nero
	Grigio Zero	Avorio	Mogano
	Grigio Chiaro	Almond	Gera
	Grigio Perla	Marrone	Ambra
	Grigio	Oro	
Shelf life	24 months in original packaging in dry place.		

By varying the quality of catalyst it is possible to shorten or lengthen workability times and the final hardening time.

GROUTING

The product must be applied using either a pneumatic spray gun or a trowel.

PNEUMATIC SPRAY GUN

Fill the spray gun's tank with the catalyzed product and cut off the delivery nozzle to the required size (diameter of at least 10 mm). Holding the gun in a vertical position, extrude the product directly into the joints.

TROWEL

Pack the mix into the joints until completely sealed and remove excess product.

CLEANING

Remove excess product by pulling the special scraper over the surface of the grouted joints. Excess product should be collected and reused. Perform final cleaning with a cloth lightly moistened with alcohol or a household liquid degreasing product. Once grouted, the panels may be handled or transported immediately without having to wait until the grout has hardened.

CAUTIONS

Do not use for applications not stated on this technical sheet.

SAFETY INFORMATION

Consult the Material Safety Data Sheet, available on request.

PRODUCT FOR PROFESSIONAL USE.

APPLICATION DATA	
Mix consistency	Creamy
Pot life	About 6 – 8 hours
Application temperature	From +5°C to +35°C
Final hardening	48 hours

Although the information in this technical sheet is source of our best experience, it is merely indicative. Each specific case must be subjected to practical preliminary tests by the user who undertakes the responsibility for the final work result..	Sheet n. 307
	Revision n. 3
	Date: March 2012