STARLIKE® CRYSTAL

TRANSLUCENT EPOXY MORTAR FOR GROUTING TRANSPARENT AND ARTISTIC GLASS MOSAICS WITH JOINTS UP TO 1/8" (3.175 mm) WIDE

DESCRIPTION

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

- Translucent color that allows light refraction
- Smooth finish thanks to the fine particle size of the glass beads
- Extremely easy application and cleaning with clean potable water
- High mechanical strength
- Water proof
- Total absence of cracks or crazing after hardening
- Excellent chemical resistance

FIELDS OF APPLICATION

Starlike® Crystal's special translucent coloring allows the product applied in the joints to "absorb" the color of the adjacent transparent glass tiles. If backlit is desired the best results are achieved if the mosaic is applied to transparent substrate such as glass and Plexiglas, possibly backlit. In this case, the mosaic tiles must be glued using a suitable transparent adhesive.
In the case of traditional substrate such as cement plasters, backerboard, paneling, sheet rock, etc. the mosaic tiles must be bonded using Litokol' s Hyperflex K100 white adhesive, a class C2TES2 cement adhesive or Litoelastic, a two-component reactive adhesive class R2T depending on the type of substrate. Please read the relative technical data sheets for correct use.
Thanks to the feature of Starlike® Crystal it is possible to get a glass mosaic surfaces with effects of considerable value and visual impact such as:

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

Starlike® Crystal can also be used to grout artistic surfaces, i.e. compositions made up of mosaic tile of murals, blends or patterns which are rich color, nuances and shadows. If the grouting of these are done with traditional colored materials, the appearance of the art work represented is compromised, because the traditional colored grout creates a discontinuity of color between the mosaic tiles. Conversely, using Starlike® Crystal, thanks to its semi-transparency, the art work retains the original nuances of the composition, creating a "neutral", colorless grouting that does not interfere with the image, it remains a neutral effect blends into the the tile work.

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 completely DRY, CLEAN, FREE OF DUST and EMPTY for the entire thickness of the mosaic tile to ensure the translucent effect of the product. If after initial application and cleaning there is a need to apply more grout those areas must be fully dried or the joints where grout is reapplied over wet joints will turn cloudy and must be removed and dried before re-application. Please ASSURE there is NO WATER or residual high HUMIDITY in the joints prior to grout. The presence of WATER or high HUMIDITY may produce unexpected results including the formation of Carbonation.

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 within the pail.

PACKS

5.5 pounds plastic bucket
11 pounds plastic bucket

PREPARING THE MIXTURE

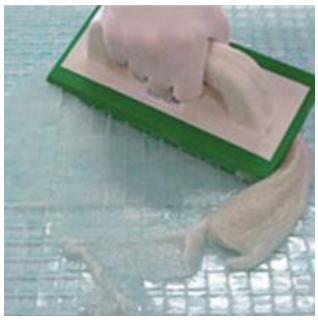
Open the bucket and remove all the components (yellowish liquid Component part B in the plastic pouch, instruction booklet and separation disc) Part A is the premixed paste material in the bottom of the bucket. Cut one corner of the plastic pouch (part B) containing the hardening agent / catalyst, and pour it onto Part A (paste). The 2 Components A and B are pre-packaged in the correct mixing Ratio as indicated above. It is mandatory to pour out the entire contents of the Component B, rolling and squeezing the plastic pouch progressively from the sealed side towards the cut side.

Mix using an electric drill with the paddle at low speed until achieving a smooth mixture without lumps. When the 2 components are properly mixed you will notice a homogeneous, uniform paste without color variation. Scrape the sides and bottom of the bucket with a spatula or trowel to ensure complete and proper mixing. It is never advisable to mix by hand.
Do NOT OVERMIX! The paste will become hot and it will result in a

shorter working time to apply the material before hardening, and will cause unwanted air into the mixture and can cause bubbling effect when applying

GROUTING THE MOSAIC SURFACE

Apply the mixture into the joints, using a suitable green epoxy float. Work the trowel to push the material in every cavity of the joint. Remove any excess using the same rubber float in a diagonal motion to the direction of the joints.



This action will also smooth the surface of the joints.
The standard and optimum temperature condition for application is between 65 and 75°F. Under these conditions, the product appears like a soft, easily workable paste, with a workability time of approximately 1 hour.
When applying the material in a vertical installation like a wall, shower or pool, you may notice a slight potential for sagging as the material is initially very fluid. Please continue to apply the material to the remaining surface to ensure you are consuming the most of the mixed bucket and retain a slight amount before completion of the work. When most all the bucket has been used go back to the starting point of the application and correct any areas of sagging with the small amount of retained mixture if any exist. If you are applying the material at a temperature BETWEEN 55 and 65°F, we suggest to store the unmixed bucket in a warmer place at around 70°F for 24 hours prior to use. We discourage however to grout material below 55°F.
If you are applying the material at a temperature ABOVE 75°F, we suggest to store the bucket material in a cooler place at around 70°F for 24 hours prior to use. We discourage however to grout material above 85°F.
The workability and hardening time of the product is greatly influenced by the environmental temperature.
The grouted material will be well hardened after 24 hours from application and it can be used even though the complete curing chemical reaction will take 5 total days under standard temperature conditions. During this time, a floor can be walked upon or a shower can be used after 24 hours under standard conditions, but the performances of stain, UV and chemical resistance, strength, etc.. are not fully accomplished. Please assure during this time that the usage of the grouted surface is as light as possible and pay attention not to spill staining substances such as Wine, Coffee, Mustard, Chemicals, etc on the surface or Hair Coloring or colored soaps. Swimming pool should be filled with water after 5 days of application under standard temperature condition.
At a temperature of 55 - 60°F, you will be able to walk on or use the grouted material only after 3 days from application.
At temperatures below 55°F, the product will be harder to apply (thicker) and the hardening time as well as the complete curing chemical reaction are also greatly lengthened.
At temperatures above 75°F, it is advisable to distribute the product as quickly as possible into the joints to not shorten the workability time because the mass of the material in the bucket will start warming up following the heat-producing chemical reaction.
Do NOT add water or solvents to improve the workability.

CLEANING AND FINISHING

Cleaning and finishing the grouting should be done while the product is still soft, and in all cases as quickly as possible after application and spreading, paying attention not to empty the joints and leaving product marks on the surface.
Dispense a sufficient quantity of clean water onto the grouted surface. The water dissolves the epoxy resin of the grout mixture and enables ease of cleaning. Perform an initial cleaning using a White Pad/ felt in a circular motion with little to no pressure applied to the pad in order to seal all sides of the mosaic tiles precisely and to remove any excess material from the surface.

The pad should feel “Lubricated” during this process, if not you have not applied enough water to this process. You will notice a whitish / milky coloration of the water and this is very normal. The water is dissolving the resin in the grout material creating an emulsion that is key to the easy to clean traits of this grout. To assure the joints remain full of material and to the correct level / height of the mosaic tile surface, apply very little pressure onto the white pad so that you will not remove too much material.
The lighter pressure, the better. Rinse the white pad as often as you can and change the water to clean water very often. You will notice that the excess material remains entrapped in the fibers of the white pad and should be cleaned often so that you do not carry continuously the resin onto the surface of the tile making the cleaning much harder. We discourage the use of any other type of pads as they are specifically designed to this function and to assure the surface of the mosaic tile will not be scratched.
Do this operation in a reasonably defined small area at a time, then use a soft sponge dampened with clean water in a straight motion diagonally to the grouted joints, very lightly for a smooth, closed surface. Very little pressure should be used also with the soft sponge as to not emptying the joints and only to rinse and remove any excess water. Use clean side of sponge only once and clean in water before using again, only one pass per clean side of sponge

If the white pad / felt and soft sponge becomes impregnated with resin and can no longer be cleaned, they should be replaced.
Let the material harden completely without walking or using the area for at least 24 hours or longer based upon application temperature, see notes above.
Do NOT COVER the grouted surface with any material, plastic, tarp, cloth or others for 24 – 48 hours under normal temperature conditions. If covering is required, because of rain or to protect the surface, do NOT apply the covering material (plastic, tarp, cloth, etc) in direct contact with the grouted surface. Potential condensation may discolor the material and form carbonation that will be impossible to remove after hardening. In this case, the covering material should be placed at least at 48" distance from the grouted surface leaving good air
circulation and assuring the area grouted is kept well ventilated.

Small spots or residues of 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 HAZE REMOVER. Please read the relative technical data sheet for correct use.

USING HAZE REMOVER TO REMOVE MARKS

Spray or pour HAZE REMOVER onto the surface to be cleaned with the help of a clean white pad / felt. Leave soaking on for 15-30 minutes ,do not let it dry.
Then use again the same white pad / felt rubbing the surface in a circular motion.
Rinse with clean water and a clean soft sponge and dry immediately with a clean, dry cloth. Do not wait for the 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 1/8" (3.175 mm).
• Apply the product preferably at temperatures between 65 and 75°F. Do not apply at temperatures very low or with high humidity to prevent the formation of surface carbonation which could affect the uniformity of the color.
• Remove any excess product promptly from the surface of the mosaic while still soft. 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 as indicated above.
• Change the cleaning water frequently.
• Prevent the water from entering the joints that are still empty while cleaning
• Change the white pad / felt and sponge when saturated with product.
• Do not wait more than 72 hours for the final cleaning with the Haze Remover
• Do not use or walk on the newly grouted surface for 24 hours or longer depending upon application temperature.
• Do not cover the newly grouted surface with any material to prevent the formation of condensation that would lead to surface carbonation on the product, altering the uniformity of the color. Wait at least 24-48 hours depending on the temperature before protecting the surface avoiding condensation.
• For the maintenance and cleaning of grouted surfaces with Starlike® Crystal we do not recommend the use of bleach. If bleach is not properly diluted and well rinsed, it can lead to a yellowing of the grouting and this could be
visible especially on light colors.
• 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, solvents or any other products.

IDENTIFICATION DATA	
Appearance	**Component A**: translucent paste **Component B**: thick liquid
Colour	Crystal C.350
Customs classification	35069190
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**: Hyperflex K100 **Wood, metal, fibreglass-reinforced plastic panelling**: Litoelastic **Plexiglass:** Primer 1217 + OTTOCOL M501 transparent **Glass:** OTTOCOL M501 transparent
Recommended Trowel for the Adhesive	Trowel with 1/8" square notches, always follow manufacturers recommendations
Waiting time for grouting after adhesion	24 hours or recommended by the adhesive instructions
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	Dough, soft paste mixture
Specific weight of the mixture	1.55 kg/l
Useable time of the mixture	About 1 hour at Temperature of 65-75°F
Application temperatures	**Admissible: from 55°F to 85°F - Recommended: from 65 to 75°F**
Can be walked on or used after	24 hours at T=65-75°F
Working time	5 days at T=55-65°F
Width of the joints	Up to 1/8" (3.175 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 of installed material	From – 4°F to +212°F

COVERAGE AREA with 1 BUCKET OF 5.5 Pounds		
Tile Size (inches) and Thickness	Coverage (square feet)	
JOINT WIDTH	1/16 ″	1/8 ″
5/8 x 5/8 x 1/8	44	22
1 x 1 x 1/8	44	22
1 x 1 x 1/4	22	11
2 x 2 x 1/4	44	22
4 x 8 x 1/4	116	58
6 x 6 x 1/4	130	64
DO NOT USE AS AN ADHESIVE		

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, no cracks, non-absorbent, uniform in colour, UV resistant and weatherproof.

CHEMICAL RESISTANCE TABLE

(the table is a summary of the chemical resistance testing performed in accordance with UNI EN 12808 specifications
CHEMICAL RESISTANCE OF installed STARLIKE® CRYSTAL grout

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.

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