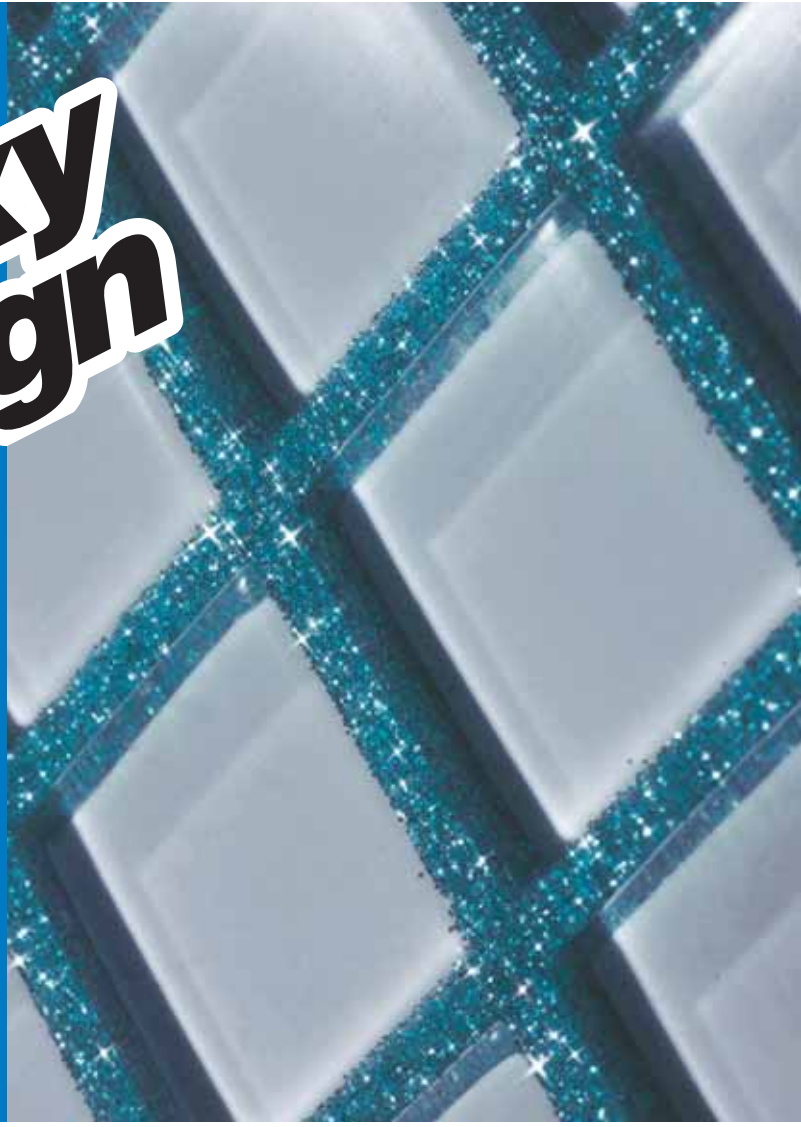
MAPEI

Kerapoxy Design



Two-component, decorative, acid resistant epoxy grout (available in 8 different colours), ideal for glass mosaics. May also be used as an adhesive

CLASSIFICATION ACCORDING TO EN 13888

Kerapoxy Design is an RG-class reactive (R) mortar for tile joints (G).

CLASSIFICATION ACCORDING TO EN 12004

Kerapoxy Design is an R2T-class reactive (R), improved (2) adhesive with no vertical slip (T).

WHERE TO USE

Decorative grouting of internal and external tiled floors and walls, in particular for glass mosaic. Also suitable for an acid resistant bond to all substrates normally used in the building industry.

Some application examples

- Installing and grouting decorative finishes in environments with an high aesthetic value (e.g. showrooms, commercial environments, etc.).
- Suitable for application on substrates where a semi-transparent finish is required, it also allows the light to filter through (e.g. glass substrates).
- Installing and grouting floors and walls in showers and bathrooms. Suitable on fibreglass and PVC substrates.
- Installing and grouting floors and walls in steam rooms, saunas and Turkish baths.
- Installing and grouting in swimming pools, especially recommended for pools containing spa or sea water.
- Repairing existing degraded grout by removing all loose areas and to a minimum uniform depth of 3 mm.

TECHNICAL CHARACTERISTICS

Kerapoxy Design is a two-component, decorative, epoxy resin-based grout with silica sand and other special components, with excellent resistance and easy cleaning properties.

Kerapoxy Design may be mixed with up to 10% by weight of **MapeGlitter**, metalized coloured glitter, to create particular special effects.

MapeGlitter is available in silver and light gold and other colours on request.

When applied correctly, it forms tile joints with the following characteristics:

- translucent effect, improves the chromatic effect of finishes with particularly decorative characteristics;
- semi-transparent finish, very similar to glass mosaic, guarantees better luminosity, lustre and appearance of the mosaic;
- excellent mechanical strength and chemical resistance, therefore excellent durability;

Kerapoxy Design

Application of Kerapoxy Design with a hard rubber grout float

Wetting the surface of the grout before cleaning

Cleaning off the glass mosaic with a damp Scotch Brite® pad

- leaves a final smooth and compact surface, which is non-absorbent and easy to clean; guarantees a high level of hygiene and blocks the formation of mildew and mould;
- excellent workability, highly improved compared with traditional epoxy mortars thanks to its creamy consistency, which guarantees a faster application, less waste and makes it easier to clean the surface of the mosaic, and to obtain a good finish;
- no shrinkage and, therefore, no cracking;
- uniform colours resistant to ultra-violet rays and atmospheric agents;
- excellent bonding properties.

RECOMMENDATIONS

- Use **Kerapoxy SP** or **Kerapoxy IEG** to grout ceramic floors subject to attack by oleic acids (ham curers, sausage factories, oil mills, etc.) and aromatic hydrocarbons.
- Use a flexible sealant from the MAPEI range (such as **Mapesil AC**, **Mapesil LM** or **Mapeflex PU20**) for flexible expansion joints or for joints subject to movement.
- **Kerapoxy Design** does not guarantee a perfect bond when used as a grout if the edges of tiles are wet or contaminated with cement, dust, oil, grease, etc.
- If porcelain gres tiles are grouted with a contrasting colour of **Kerapoxy Design** (for example black on white), carry out preliminary tests beforehand.
- Do not add water or solvents to **Kerapoxy Design** to increase its workability.
- Use the product at temperatures between +12°C and +30°C.
- The packages are pre-dosed and, therefore, it is not possible to make mixing errors.
  Do not mix parts of the two components at a glance: hardening will be compromised if the catalysing ratio is wrong.
- If hardened **Kerapoxy Design** has to be removed from the joints, use an industrial hot air blower. If hardened residues of the product remain attached to the tiles, use **Pulicol** for cleaning.

ACID RESISTANT GROUTING APPLICATION METHOD

Preparation of the joints

The joints must be clean, free from dust and empty down to at least 2/3 of the thickness of the tiles. Any adhesive or mortar which has seeped into the joints while laying the tiles must be removed while still fresh.
Before grouting, make sure the installation mortar or adhesive has set and that most of the humidity has evaporated.
Kerapoxy Design is not harmed by damp from the substrate, but the joints must not be wet when grouting.

Preparation of the mix

Pour the catalyst (component B) into the container of component A and mix well until a smooth paste is obtained. We recommend using a low-speed electric mixer to guarantee perfect bonding, and to avoid overheating of the mix which would reduce working times. Where required, add **MapeGlitter** once the blend has been mixed, at a ratio of up to 10% by weight. Use the mix within 45 minutes of its preparation.

Application

Spread **Kerapoxy Design** with a special MAPEI grout float, making sure that the joints are filled right down to the bottom. With the edge of the same grout float, remove excess material.

Finish

Tiled finishes must be cleaned after grouting while the **Kerapoxy Design** is still “fresh”, and in all cases within 60 minutes of its application.
Cleaning of the joints may be carried out using a small amount of water and a hard, cellulose sponge (MAPEI sponge, for example), having care being careful to avoid removing grout from the joints. The sponge must be saturated with water when cleaning tiles.
For surfaces which are not smooth, a Scotchbrite pad may be used to make the operation easier.
The residual liquid may be removed with the same sponge, which must be replaced when it becomes too impregnated with resin, and the same technique may be used to finish off the grouted joints.
After the finishing operation, it is very important that no traces of **Kerapoxy Design** remain on the surface of the tiles. Once hardened, it is very difficult to remove. Therefore, rinse the sponge often with clean water during cleaning.
With very large floor surfaces, finishing may be carried out by wetting the surface and using a single-head rotary machine with special abrasive felt disks such as Scotch-Brite®. Residual liquid may be drawn off using a rubber rake.
If too much time has passed and the **Kerapoxy Design** has already started to set, it may be emulsified using a Scotch-Brite® pad with up to 10% alcohol added to the water.

APPLICATION METHOD WHEN USED AS ADHESIVE

After mixing the two components as described above, spread the adhesive on the substrate using a suitable notched

CHEMICAL RESISTANCE OF CERAMIC TILING GROUTED WITH KERAPOXY DESIGN

PRODUCT			USE		
				INDUSTRIAL FLOORING	
Group	Name	Concentration %	Laboratory benches	Permanently used (+20°C)	Sporadically used (+20°C)
Acids	Acetic acid	2.5	+	+	+
		5	+	(+)	+
		10	–	–	–
	Hydrochloric acid	37	+	+	+
	Chromic acid	20	–	–	–
	Citric acid	10	+	(+)	+
	Formic acid	2.5	+	+	+
		10	–	–	–
	Lactic acid	2.5	+	+	+
		5	+	(+)	+
		10	(+)	–	(+)
	Nitric acid	25	+	(+)	+
		50	–	–	–
	Pure oleic acid	–	–	–	–
	Phosphoric acid	50	+	+	+
		75	(+)	–	(+)
	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 in solution:				
	active chlorine	6.4 g/l	+	(+)	+
	active chlorine	162 g/l	–	–	–
	Potassium	5	+	(+)	+
	permanganate	10	(+)	–	(+)
	Potassium hydroxide	50	+	+	+
	Sodium bisulphite	10	+	+	+
Saturated solutions at 20°C	Sodium hyposulphite		+	+	+
	Calcium chloride		+	+	+
	Ferric chloride		+	+	+
	Sodium chloride		+	+	+
	Sodium chromate		+	+	+
	Sugar		+	+	+
	Aluminium sulphate		+	+	+
Oils and fuels	Petrol		+	(+)	+
	Oil of turpentine		+	+	+
	Diesel oil		+	+	+
	Coal-tar oil		+	(+)	(+)
	Olive oil		(+)	+	+
	Light fuel oil		+	+	+
	Heavy fuel oil		+	+	+
	Crude oil		+	+	+
Solvents	Acetone		–	–	–
	Ethylene glycol		+	+	+
	Glycerine		+	+	+
	Methylene glycol acetate		–	–	–
	Perchloroethylene		–	–	–
	Carbon tetrachloride		(+)	–	(+)
	Ethyl alcohol		+	(+)	+
	Trichloroethylene		–	–	–
	Chloroform		–	–	–
	Methylene chloride		–	–	–
	Tetrahydrofurane		–	–	–
	Toluene		–	–	–
	Carbon sulphide		(+)	–	(+)
	White spirit		+	+	+
	Benzene		–	–	–
	Trichloroethane		–	–	–
	Xylene		–	–	–
	Mercuric chloride ($HgCl_2$)	5	+	+	+
	Hydrogen peroxide	1	+	+	+
		10	+	+	+
		25	+	(+)	+

Legend: + excellent resistance (+) good resistance – poor resistance

TECHNICAL DATA (typical values)

Conforms to the following standards:

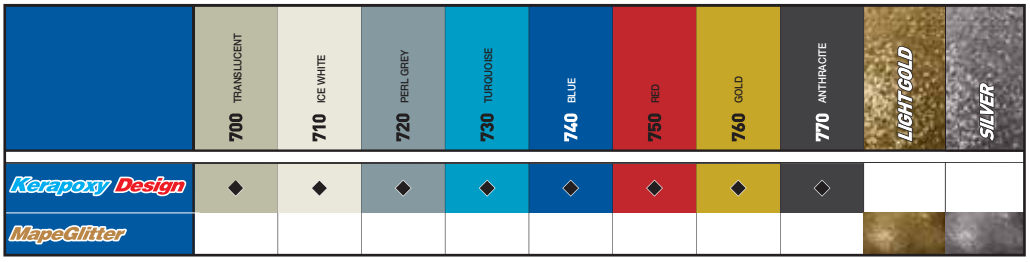
- **European: EN 12004 (R2T)**
- **ISO 13007-1 (R2T)**
- **European: EN 13888 (RG)**
- **ISO 13007-3 (RG)**
- **American ANSI A 118.3 - 1992**
- **Canadian 71 GP 30 M type 1**

PRODUCT DETAILS		
	component A	**component B**
Consistency:	thick paste	gel
Colour:	available in 7 different colours + neutral	
Density (g/cm³):	1.64	1.06
Dry solids content (%):	100	100
Brookfield viscosity (mPa·s):	550,000	22,000
Storage:	24 months in original packaging in a dry place. Store component A at a temperature of at least +10°C to avoid crystallisation of the product, reversible by heating up	
Hazard classification according to EC 1999/45:	irritant	corrosive Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet
Customs class:	3506 91 00	
APPLICATION DATA (at +23°C and 50% R.H.)		
Mixing ratio:	component A : component B = 9 : 1	
Consistency of the mix:	creamy paste	
Density of mix (kg/m³):	1,550	
Pot life of mix:	45 minutes	
Application temperature range:	from +12°C to +30°C	
Open time (as adhesive):	30 minutes	
Adjustment time (as adhesive):	60 minutes	
Set to light foot traffic:	24 hours	
Ready for use:	4 days	
FINAL PERFORMANCE		
Bond (shear strength) according to EN 12003 (N/mm²): **– initial bond:** **– after immersion in water:** **– after thermal shock:**	 25 23 25	
Flexural strength (EN 12808-3) (N/mm²):	31	
Compressive strength (EN 12808-3) (N/mm²):	50	
Abrasion resistance (EN 12808-2):	147 (loss in mm³)	
Shrinkage (EN 12808-4) (mm/m):	0.80	
Water absorption (EN 12808-5) (g):	0.05	
Resistance to humidity:	excellent	
Resistance to ageing:	excellent	
Resistance to solvents and oil:	very good (refer to table)	
Resistance to acids and alkalis:	excellent (refer to table)	
In service temperature range:	from -20°C to +100°C	

Spreading blue Kerapoxy Design used as an adhesive with notched trowel

Laying glass mosaic with Kerapoxy Design on wall

The following day, grouting with Kerapoxy Design in the same colour and the same application procedure previously shown



trowel. Join the pieces to be bonded by pressing them together to guarantee good buttering. Once set, the bond is extremely strong and resistant to chemical agents. The particular consistency of the product makes it possible to grout the joints immediately after bonding the tiles, including on vertical surfaces, which considerably reduces the final laying time.

SET TO LIGHT FOOT TRAFFIC

Floors may be set to light foot traffic after 24 hours at +20°C.

READY FOR USE

4 days. After 4 days, the surfaces may also be subjected to chemical attack.

Cleaning

Tools and containers may be cleaned while the product is still fresh using plenty of water. Once **Kerapoxy Design** has set, they may only be cleaned mechanically or with **Pulicol**.

CONSUMPTION

The consumption of **Kerapoxy Design** varies according to the size of the joints and the size and thickness of the tiles. The consumption is approximately 1.3 kg/m² when used to grout mosaic.
When used as an adhesive, the consumption of **Kerapoxy Design** is 2-4 kg/m².
It is possible to use the following formula to evaluate consumption on sizes and grouts of different width.

FORMULA FOR THE COVERAGE CALCULATION:

$$\frac{(A + B)}{(A \times B)} \times C \times D \times 1.5 = \frac{kg}{m^2}$$

A = length of tile (in mm)
B = width of tile (in mm)
C = thickness of tile (in mm)
D = width of joint (in mm)

MapeGlitter consumption varies according to the desired aesthetic effect and at maximun it is equal to 10% by weight of **Kerapoxy Design**.

PACKAGING

Kerapoxy Design is supplied, with mixing proportions carefully measured, in drums containing part A and canister containing component B, which must only be added at the moment it is required.
The product is supplied in 3 kg units.

COLOURS AVAILABLE

Kerapoxy Design is available in 8 colours (7 colours + neutral - No. 700 translucent).

MapeGlitter is available in silver and light gold. A further 22 colours are available on request.

STORAGE

Kerapoxy Design may be stored for up to 24 months in its original packaging in a dry place.
Store component A at a temperature of at least +10°C to avoid crystallisation of the product, reversible by heating up.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Kerapoxy Design (comp. A and comp. B) may irritate the eyes, respiratory apparatus and the skin.
May cause allergic reactions if it comes into contact with the skin. If the product comes into contact with eyes, rinse off well with plenty of clean water and seek medical advice. We recommend the use of suitable protective gloves and protection for eyes and face.

Kerapoxy Design is hazardous for the environment. Do not dispose of it in the environment, it must be treated as dangerous waste.

PRODUCT FOR PROFESSIONAL USE.

WARNING

While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.

All relevant references for the product are available upon request and from www.mapei.com

Kerapoxy Design

149-9-2008

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