



# Kerapoxy Design

**Two-component, decorative, acid resistant epoxy grout (available in 15 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 R2-class reactive (R), improved (2) adhesive.

## **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.

**Kerapoxy Design** allows you to create floors, walls, worktops etc. in compliance with the HACCP system and the requirements of EC Regulation No. 852/2004 regarding hygiene and foodstuffs.

## **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 thermal facilities, 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 very low emission of volatile organic compounds, with silica sand and other special components, with excellent chemical 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. Percentage depends on the aesthetical effect and workability desired.

**MapeGlitter** is available in silver and light gold and other 22 colours on request.

When applied correctly, **Kerapoxy Design** 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;





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

- excellent mechanical strength and chemical resistance, therefore excellent durability;
- 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**, **Mapeflex PU40**, **Mapeflex PU45** or **Mapeflex PU50 SL**) 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.
- **Kerapoxy Design** leaves a semi-transparent, translucent finish and the final colour may vary dependent on the type and colour of mosaics on which it is applied and the colour of the adhesive used for bonding. This variation must be taken into consideration if the grout is used for different types of tile in the same room.
- 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.
- Do not use **Kerapoxy Design** to grout joints which are wider than 7 mm.
- 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 rough guess the quantities when mixing: 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 localized residues of the product remain attached to the tiles, use **Pulicol 2000** 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 moisture 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 hardner (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 blending, 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 preparation.

### Application

Spread **Kerapoxy Design** with a special MAPEI grout float, making sure that the joints are filled right down to the bottom. Remove excess material by passing the edge of the same trowel diagonally over the tile joints.

### Finish

Tiled finishes must be cleaned after grouting while the **Kerapoxy Design** is still "fresh".

Wet the grouted surface and emulsify with an abrasive pad for cleaning joints (such as Scotch-Brite® or MAPEI tile-joint cleaning kit). Take care not to drag grout from the joint. Tiles/mosaics may also be cleaned with the same pad, but it must be more saturated with water.

Any liquid which remains on the surface may be removed with a hard, cellulose sponge (such as a MAPEI sponge). Replace the sponge when it is impregnated with too much resin, and also when finishing 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.

## CHEMICAL RESISTANCE OF CERAMIC TILING GROUTED WITH KERAPOXY DESIGN

PRODUCT				USE	
Group	Name	Concentration %	Laboratory benches	INDUSTRIAL FLOORING	
				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 permanganate	5	+	(+)	+
		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, fuels		+	(+)	+
	Turpentine		+	+	+
	Diesel fuel		+	+	+
	Tar oil		+	(+)	(+)
	Olive oil		(+)	+	+
	Light fuel oil		+	+	+
	Petrol		+	+	+
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 <sub>2</sub> )	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 as R2T
- ISO 13007-1 as R2T
- European EN 13888 as RG
- ISO 13007-3 as RG
- American ANSI A 118.3 - 1992
- Canadian 71 GP 30 M type 1

### PRODUCT IDENTITY

	component A	component B
Type:	thick paste	gel
Colour:	available in 14 different colours and translucent	
Density (g/cm <sup>3</sup> ):	1.64	1.06
Dry solids content (%):	100	100
Brookfield viscosity (mPa·s)	700,000	400,000
EMICODE:	EC1 R Plus - very low emission	

### APPLICATION DATA (at +23°C and 50% R.H.)

Mix ratio:	component A : component B = 9 : 1
Consistency of mix:	creamy paste
Density of mix (kg/m <sup>3</sup> ):	1,550
Pot life of mix:	45 minutes
Application temperature range:	from +12°C to +30°C
Open time (as an adhesive):	30 minutes
Adjustability 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/mm <sup>2</sup> ):	
- initial bond:	25
- after immersion in water:	23
- after thermal shock:	25
Flexural strength (EN 12808-3) (N/mm <sup>2</sup> ):	45
Compressive strength (EN 12808-3) (N/mm <sup>2</sup> ):	75
Abrasion resistance (EN 12808-2):	147 (loss in mm <sup>3</sup> )
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



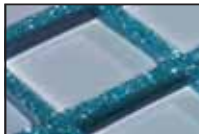
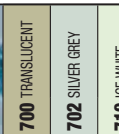



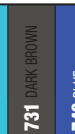









Spreading blue Kerapoxy Design used as an adhesive with notched trowel



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

																
<b>Kerapoxy Design</b>	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
<b>MapeGlitter</b>																

The table contains the 15 base colours from the current **Kerapoxy Design** range. All the colours in the **Kerapoxy Design** range may be mixed with light gold or silver **MapeGlitter** to create an even wider range of colours.

**Kerapoxy Cleaner** (special cleaning solution for epoxy grout) may also be used for the final cleaning cycle and may also be used to remove thin residues of grout up to several hours after application. In this case, the product must be left to react for longer (at least 15-20 minutes).

The efficiency of **Kerapoxy Cleaner** depends on the amount of residual resin and the amount of time gone by after application. Cleaning must be carried out while still “fresh” as described above.

#### APPLICATION METHOD WHEN USED AS ADHESIVE

After mixing the two components as described above, spread the adhesive on the substrate using a suitable notched trowel. Firmly press the tiles/mosaics into the adhesive bed to guarantee good adhesive transfer. 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 are ready for 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, it may only be removed mechanically or with **Pulicol 2000**.

#### CONSUMPTION

The consumption of **Kerapoxy Design** varies dependent on the size of the joints and the size and thickness of the tiles. The consumption is approximately 1.4 kg/m<sup>2</sup> (2x2 cm size) when used to grout mosaic. When used as an adhesive, the consumption of **Kerapoxy Design** is 2-4 kg/m<sup>2</sup>.

It is possible to use the following formula to evaluate grout consumption:

#### FORMULA FOR THE COVERAGE CALCULATION:

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

A = length of tile (mm)

B = width of tile (mm)

C = thickness of tile (mm)

D = width of joint (mm)

**MapeGlitter** consumption varies according to the desired aesthetic effect and at maximum 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.

**MapeGlitter** is supplied in 100 g sachets.

#### COLOURS AVAILABLE

**Kerapoxy Design** is available in 15 colours (14 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) may irritate the eyes, respiratory system and the skin. Component B is corrosive and may cause burns, and is harmful if inhaled or swallowed or if it comes into contact with the skin. It may cause sensitization if it comes in contact with skin for predisposed persons. 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. Use the product in well-ventilated areas.

# Kerapoxy Design



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

For further and complete information about the safe use of our product please refer to our latest version of the Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

### WARNING

*Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application: for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application: in every case,*

*the user alone is fully responsible for any consequences deriving from the use of the product.*

**Please refer to the current version of the Technical Data Sheet, available from our web site [www.mapei.com](http://www.mapei.com)**



This symbol is used to identify Mapei products which give off a low level of volatile organic compounds (VOC) as certified by GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an international organisation for controlling the level of emissions from products used for floors.



**Our Commitment To The Environment**  
MAPEI products assist Project Designers and Contractors create innovative LEED (The Leadership in Energy and Environmental Design) certified projects, in compliance with the U.S. Green Building Council.

**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**



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