MAPEI

Kerapoxy

Two-component acid-resistant epoxy grout (available in 26 colours) for joints of at least 3 mm. Can also be used as an adhesive

CLASSIFICATION IN COMPLIANCE WITH EN 13888

Kerapoxy is a reaction resin (R) grout (G) of class RG.

CLASSIFICATION IN COMPLIANCE WITH EN 12004

Kerapoxy is an improved (2) reaction resin adhesive (R) and slip resistant (T) of class R2T.

WHERE TO USE

Indoor and outdoor grouting of ceramic tile and natural stone floors and walls. Also suitable for acid-resistant bonding and rapid setting of ceramic tiles, stone materials, fibre-cement, concrete and any other building material on all types of substrates normally used in construction.

Some application examples

- Grouting floors and walls in the food industry (dairies, abattoirs, breweries, wine-cellars, conserved-food plants, etc.), shops and areas where hygiene is required (ice-cream shops, butchers, fish vendors, etc.).
- Grouting industrial floors and walls (electrical industries, tanneries, battery rooms, paper-mills, etc.), where high mechanical resistance and resistance to acid attack is required.
- Grouting swimming pools; particularly suitable for basins containing salt or thermal water.
- Grouting tanks containing aggressive chemicals (purification plants, etc.).

Kerapoxy

Grouting of single fired tile wall with a float

Finishing of single fired tile wall with a Scotch-Brite® pad

Finishing of single fired tile wall with a sponge

- Grouting ceramic tiles on laboratory benches, kitchen work surfaces, etc.
- Acid-resistant bonding of tiles (used as an adhesive in compliance with class R2T specification according to EN 12004 standard).
- Bonding marble doorsteps and window-sills.
- Bonding tiles in plastic reinforced by fibre glass swimming pools.
- Bonding special pieces of tiles.

TECHNICAL CHARACTERISTICS

Kerapoxy is a two-component epoxy-resin-based product with silica sand and special components, with excellent resistance to acids and excellent cleanability.

The following features are obtained when used correctly:

- Excellent mechanical and chemical resistance, therefore excellent durability.
- A smooth final surface with low water absorption, therefore easy to clean; ensures hygiene.
- Easy workability and finishing.
- Becomes very hard and is highly resistant to heavy traffic.
- No shrinkage, therefore absence of cracks and fissures.
- Uniform colours that are resistant to ultra-violet rays and atmospheric agents.
- Excellent bonding.

RECOMMENDATIONS

- Because of the tessara's reduced thickness, **Kerapoxy** can also be used for grouting glass mosaics with joints less than 3 mm.
- When grouting ceramic tiled floors and walls subject to oleic acid attack (e.g. ham and sausage industries, oil-mills, etc.) and aromatic hydrocarbon, use **Kerapoxy SP** or **Kerapoxy IEG** (available in 113 or 130 colours of MAPEI range).
- For flexible expansion joints or joints subject to movement use an elastic sealant from the MAPEI range (e.g. **Mapesil AC**, **Mapesil LM**, **Mapeflex PU45** or **Mapeflex PU21**).
- **Kerapoxy** does not ensure perfect adhesion when used for grouting tiles with wet edges or contaminated with cement, dust, oil, grease, etc.
- Unglazed klinker tiles should be grouted with the same colour tone **Kerapoxy**. All other colours should be used only with glazed tiles.
- Do not use **Kerapoxy** for grouting terracotta tiles because they are difficult to clean.
- Make preliminary sample tests before grouting porcelain tiles with a contrasting colour of **Kerapoxy** (e.g. black on white).
- Always make preliminary sample tests before grouting stone materials or smoothened porcelain.
- Do not add water or any solvents to **Kerapoxy** to make it more fluid.
- Use the product in temperatures between +12°C and +30°C.
- The quantities are already in the correct proportions, therefore mistakes cannot be made. Do not rough guess the quantities when mixing the two compounds. A wrong catalysis ratio could damage the hardening process.
- When removing already cured **Kerapoxy** from the joints, use a hot air industrial drier. Remove hardened **Kerapoxy** from the tiles with **Pulicol 2000.**
- When grouting large floor surface areas, it is recommended to use **Kerapoxy P**, available in grey 113 and 130 of MAPEI range (other colours are available upon request) because it is very fluid and easy to apply.

APPLICATION PROCEDURE

Preparing the joints

The joints must be dry, clean, free of dust and emptied at least 2/3 of the tile thickness. The excess adhesive or mortar should be removed while still fresh.

Before grouting, make sure that the installation mortar or the adhesive has set and released most of its moisture.

Kerapoxy is not affected by the moisture on the surface; the joints should not be wet during work.

Preparing the mix

Pour all the hardener, component B, into a bucket containing component A and mix well until a smooth paste is obtained. For perfect mixing and avoiding overheating of the mixture, which could reduce working time, a low speed electric stirrer should be used. Use the paste within 45 minutes from mixing.

Applying the grout

Spread **Kerapoxy** with the appropriate MAPEI float, making sure the joints are completely filled. Use the same float, but on edge, to remove excess grout.

Finishing

After grouting with **Kerapoxy**, floors and walls should be cleaned immediately, before the product dries.

Wet the surface thoroughly and emulsify with an abrasive pad for cleaning joints (such as Scotch-Brite® or MAPEI tile-joint cleaning kit), making sure not to wash-out the joints. When cleaning walls, the cleaning pad should be fully soaked with water. The excess liquid can be removed with a hard cellulose sponge (e.g. MAPEI sponge), and should be replaced when too full of resin. Use the same type of sponge for the final tooling of the grout.

CHEMICAL RESISTANCE OF CERAMIC TILING GROUTED WITH KERAPOXY

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, 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 ($HgCl_2$)	5	+	+	+
	Hydrogen peroxide	1	+	+	+
		10	+	+	+
		25	+	(+)	+

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

TECHNICAL DATA (typical values)

In compliance with:

- European EN 12004 as R2T
- ISO 13007-1 as R2T
- European EN 13888 as RG
- ISO 13007-1 as RG
- BS 5980-1980 type 5 class AA
- American ANSI A118.3 – 1992
- Canadian 71 GP 30 M type 1

PRODUCT IDENTITY		
	part A	**part B**
Type:	thick paste	dense liquid
Colour:	26 colours available	
Density (g/cm³):	1.64	0.97
Dry solids content (%):	100	100
Brookfield viscosity (mPa·s)	3500000	900
Storage:	24 months in a dry place in original packaging. Store part A at a temperature of at least +10°C to avoid crystallisation which, however, can be reversed by warming	
Hazard classification according to 1999/45/EC:	irritant Before using refer to the "Safety instructions for preparation and application" paragraph and the information on the packaging and Safety Data Sheet	irritant
Customs class:	3506 91 00	

COMPOSITION AND PROPERTIES OF THE MIXTURE (at +23°C and 50% R.H.)	
Mix ratio:	component A : component B = 9 : 1
Consistency of mix:	thick paste
Density of mix (kg/m³):	1,550
Pot life:	45 minutes
Application temperature:	from +12°C to +30°C
Open time (as an adhesive):	30 minutes
Adjustability time (as an adhesive):	60 minutes
Set to light foot traffic:	24 hours
Ready for use:	4 days

FINAL PERFORMANCE	
Shear adhesion strength according to EN 12003 (N/mm²): **– initial:** **– after water immersion:** **– after thermal shock:**	 25 23 25
Flexural strength (EN 12808-3) (N/mm²):	31
Compressive strength (EN 12808-3) (N/mm²):	55
Resistance to abrasion (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 moisture:	excellent
Resistance to ageing:	excellent
Resistance to solvents and oils:	very good (see table)
Resistance to acids and alkali:	excellent (see table)
Temperature in use:	from –20°C to +100°C

Finishing a porcelain tiled floor with single-brushed power float or rubber squeegee

Grouting a ceramic tile floor with wood inlays with a trowel

Finishing a ceramic tile floor with wood inlays with a sponge

CONSUMPTION TABLE DEPENDENT ON THE SIZE OF THE TILES AND WIDTH OF THE JOINTS (kg/m²)

Size of the tile (mm)	Width of the joint (mm):			
	3	5	8	10
75 x 150 x 6	0.6	1.0	–	–
100 x 100 x 6	0.6	1.0	–	–
100 x 100 x 10	1.0	1.6	–	–
100 x 200 x 6	0.5	0.8	–	–
100 x 200 x 10	–	1.2	2.0	2.4
150 x 150 x 6	0.4	0.7	–	–
200 x 200 x 8	0.4	0.7	–	–
120 x 240 x 12	–	1.2	2.0	2.4
250 x 250 x 12	–	0.8	1.3	1.6
250 x 330 x 8	0.3	0.5	0.8	0.9
300 x 300 x 8	0.3	0.5	0.7	0.9
300 x 300 x 10	0.4	0.6	0.9	1.1
300 x 600 x 10	0.3	0.4	0.7	0.8
330 x 330 x 10	0.3	0.5	0.8	1.0
400 x 400 x 10	0.3	0.4	0.7	0.8
450 x 450 x 12	–	0.5	0.7	0.9
500 x 500 x 12	–	0.4	0.6	0.8
600 x 600 x 12	–	0.4	0.5	0.7

FORMULA FOR THE COVERAGE CALCULATION:

$$\frac{(A + B)}{(A \times B)} \times C \times D \times 1.6 = \frac{kg}{m^2}$$

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

It is very important that once the finishing process has ended, no traces of **Kerapoxy** are left on the tile surface because it will be very difficult to remove. It is therefore necessary to frequently rinse the sponge with clean water during the cleaning process.

When finishing large floor surface areas, use a rotary, disc-type power float with Scotch-Brite® abrasive pads, well saturated with water.
All excess liquid can be removed with a rubber squeegee. The final cleaning cycle may be carried out using **Kerapoxy Cleaner** (special cleaning solution for epoxy grout).
Kerapoxy Cleaner may also be used to remove thin residues of grout several hours after application. In such cases, the product must be left to react for longer (15-20 mins.).

The efficiency of **Kerapoxy Cleaner** depends on the amount of resin residues and how much time has passed since application. Cleaning must always be carried out while "fresh" as described above.

APPLICATION PROCEDURE AS AN ADHESIVE

After mixing the two components as described above, spread the adhesive with a notched trowel. Apply the tile under firm pressure to ensure good contact. After setting, bonding becomes extremely strong and resistant to chemical agents.

SET TO LIGHT FOOT TRAFFIC

At +20°C, floors are set to light foot traffic after 24 hours.

READY FOR USE

4 days. Surfaces can also undergo chemical attack after 4 days.

Cleaning

Clean tools and containers with plenty of water before **Kerapoxy** hardens.

An example of a grouted battery room

An example of grouted ornamental stones

An example of a bonded and grouted kitchen worktop

Kerapoxy

When **Kerapoxy** has hardened, removal is only possible by mechanical means or with **Pulicol 2000**.

CONSUMPTION
Consumption of **Kerapoxy** varies depending on the width of the joints, the size and thickness of the tiles.
Some examples of consumption in kg/m² are shown in the chart.

PACKAGING
Kerapoxy is supplied, with mixing proportions carefully measured, in drums containing component A and bottles of component B. The total weight of the units is: 10, 5 and 2 kg in total.

COLOURS
Kerapoxy is available in 26 colours from the "MAPEI COLOURED GROUTS" range.

STORAGE
Kerapoxy can be stored 24 months in a dry place in original packaging.
Store component A at a temperature of at least +10°C to avoid crystallisation which, however, can be reversed by warming.

INSTRUCTIONS FOR PREPARATION AND APPLICATION
Kerapoxy (par A and B) is irritant for eyes, respiratory tract and skin. May cause sensitisation by skin contact. In case of contact with eyes, wash immediately with plenty of water and consult a doctor.
Use protective clothing, gloves and goggles.
Kerapoxy is dangerous for the environment.
Avoid release of the product to the environment and dispose 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

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

An example of a grouted brewery floor

An example of a grouted wine cellar floor

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BUILDING THE FUTURE

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