

KERAPOXY SP

Three-component epoxy grout with high chemical resistance for grouting joints with a minimum width of 5 mm



CLASSIFICATION IN COMPLIANCE WITH EN 13888

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

WHERE TO USE

Acid-resistant grouting of ceramic tile floors wherever there is a need for higher chemical resistance than that obtained from normal epoxy grouting compounds: in particular where resistance to oleic acid and aromatic hydrocarbons is required.

Some application examples

- Grouting ceramic floors in meat processing factories, particularly in rooms where trimming, cleaning, boning and seasoning operations are carried out, i.e. where the animal fat stays in contact with the grout for extended periods of time and where the installation is subject to frequent washing with hot water under pressure.
- Grouting ceramic floors in food preparation factories, particularly in cooking rooms, where the grout is subject to the combined action of oleic acid and high temperatures.
- Grouting ceramic floors in areas susceptible to food acids, hot oils, animal fats and similar food processing operations.

TECHNICAL CHARACTERISTICS

Kerapoxy SP is a three-component mortar consisting of a liquid epoxy resin, a specially formulated amine-based hardener and a mineral filler composed of graded silica sand, specially proportioned, according to a formula developed in the MAPEI Research Laboratories, to obtain the greatest grout density.

Without undergoing noticeable shrinkage, **Kerapoxy SP** hardens quickly by chemical reaction alone, and becomes a product whose chemical and mechanical resistance is higher than those of normal epoxy grouting compounds (see table 1).

Kerapoxy SP is only available in beige.

RECOMMENDATIONS

- **Kerapoxy SP** must not be used for flexible expansion joints or for joints that are subject to movement. Use a MAPEI flexible sealant, for example **Mapesil AC**, **Mapeflex PU21**, **Mapeflex PU20**.
- Perfect adhesion cannot be guaranteed if **Kerapoxy SP** is used for grouting tiles with wet edges or those contaminated with cement, dust, oil, grease, etc.
- Do not add water or solvent to **Kerapoxy SP** to increase workability.
- Always mix the three components with scales: a wrong catalyst ratio is detrimental to the hardening process.
- **Kerapoxy SP** has a higher modulus of elasticity than **Kerapoxy** (15,000 N/mm² against 1,500 N/mm²); it is therefore essential to provide more frequent expansion joints, certainly at least every 4-5 metres.

APPLICATION PROCEDURE

Preparing the joints

The joints must be dry, clean, free of dust and empty for at least 2/3 of the depth of the tiles. Any excess adhesive or grout must be cleaned while still fresh.

Before grouting make sure the fixing mortar or the adhesive has released most of its moisture.

Kerapoxy SP is not affected by surface moisture but the joints should not be wet during grouting.

Preparing the mix

Mix the two liquid components first, i.e. the resin (component A) and the hardener (component B) using a suitable mixing machine.

The quantities are already in the correct proportions, so mistakes in mixing should not be made. Then add the powder (component C) and keep stirring until a smooth paste with the consistency of damp sand is obtained. Apply the mortar immediately after mixing; the mix has a limited working time (20 minutes).

Applying the mix

Kerapoxy SP should be applied with a 12 cm pointing trowel (see photo).

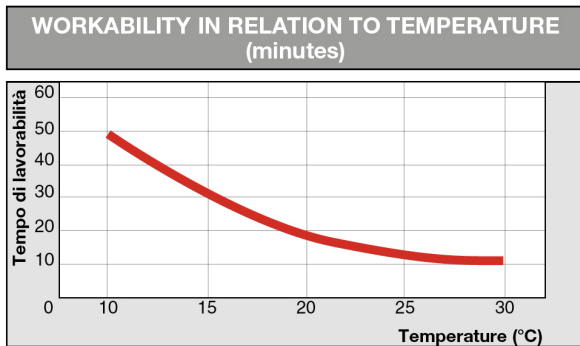
Fill the joints completely and press in the paste thoroughly. The excess **Kerapoxy SP** must be removed from the joints.

Room and floor temperature have a big influence on the setting, working and cleaning times of **Kerapoxy SP**.

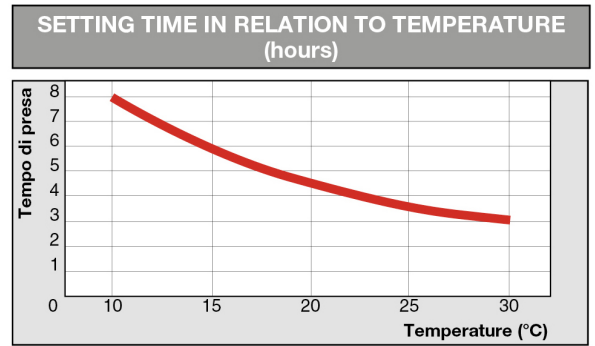
In contrast to what happens with traditional epoxy grouting compounds, a fall in temperature from +25/30°C to +5/10°C does not make the application of **Kerapoxy SP** more difficult.

However pot life, working time and cleaning time of **Kerapoxy SP** varies greatly between about 50 minutes at +10°C and 10 minutes at +30°C (see graph No. 1).

The setting time is also highly influenced by temperature: from about 3 hours at +30°C to 8-10 hours at +10°C (see graph No. 2).



Graph No. 1

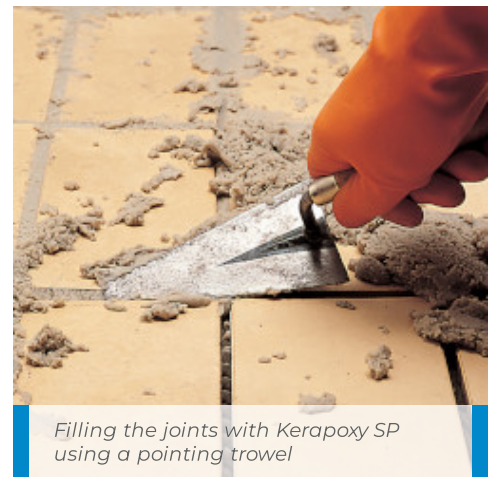
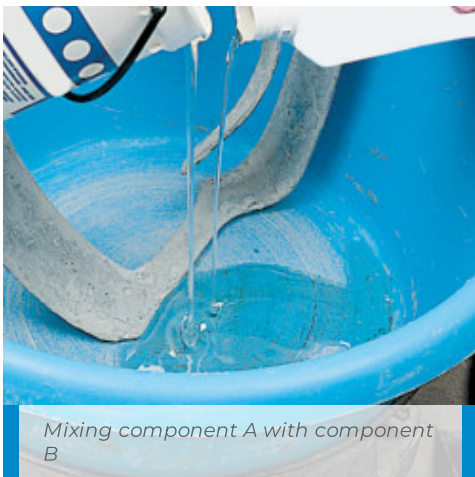


Graph No. 2

Finishing

Final cleaning must be carried out by using a rotary disk type power float using a cloth moistened with ethyl alcohol.

Warning! Once it has completely set, **Kerapoxy SP** can only be cleaned off by mechanical means; but this is very likely to damage the surface of the tiles.





Removing the excess Kerapoxy SP with a broom



Ethyl alcohol and cleaning cloth



Cleaning with alcohol and a cloth using a rotary-disk type power float



Difference between Kerapoxy SP (left) and Kerapoxy (right) after 28 days immersion in oleic acid

SET TO LIGHT FOOT TRAFFIC

Floors (at +23°C) are set to light foot traffic after approx. 6 hours.

READY FOR USE

Surfaces are ready for use after approx. 24 hours.

CLEANING

Cleaning tools and containers can be carried out with ethyl alcohol so long as **Kerapoxy SP** is fresh. After setting, cleaning can only be carried out by mechanical means or with **Pulicol**.

CONSUMPTION

The consumption of **Kerapoxy SP** depends on the size (width and depth) of the joints and their quantity; note that the density of the product is 2020 kg/m³.
Table 2 shows indicative consumption in kg/m² for certain types of floors according to the tile and joint size and thickness.

PACKAGING

Kerapoxy SP is supplied, with the proportions carefully measured ready for mixing, in drums of 10 kg containing the powder (component C), together with a can of component A and a bottle of component B. Component A and component B are liquids which must be mixed together just before use.
Kerapoxy SP is only available in beige.

STORAGE

24 months in original packaging.

SAFETY INSTRUCTIONS FOR THE PREPARATION AND APPLICATION

Kerapoxy SP component A is irritant by direct contact with eyes and skin.

Kerapoxy SP component B contains highly caustic and hazardous substances causing reactions when inhaled. After direct contact, sensitivity could occur. Always use protective gloves and goggles and create, while grouting, good ventilation in the rooms. Once the work is done, carefully wash hands and face with plenty of clean water and soap. In case of contact with eyes or skin, immediately wash with plenty of running water and consult a doctor. A doctor should be consulted also in the case of sensitivity symptoms.

Kerapoxy SP component A is dangerous to aquatic organisms - avoid release to the environment.

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

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values) In compliance with: – European norms EN 13888 as RG – ISO 13007-3 as RG			
PRODUCT IDENTITY			
	component A	component B	component C
Consistency:	viscous liquid	liquid	powder
Colour:	straw-coloured	straw-coloured	sand-coloured
Density (g/cm³):	1.17	1.06	–
Bulk density (kg/m³):	–	–	1300
Brookfield Viscosity (mPa·s):	11,000	200	–
COMPOSITION AND PROPERTIES OF THE MIXTURE (at +23°C - 50% R.H.)			
Mixing ratio:	comp. A : comp. B : comp. C = 13 : 4 : 83		
Consistency of the mix:	damp sand		
Density of mix (kg/m³):	2020		
Pot life:	20 minutes		
Application temperature range:	from +5°C to +30°C		
Working time:	20 minutes		
Set to light foot traffic:	after 6 hours		
Ready for use:	24 hours		
FINAL PERFORMANCES			
Flexural strength (N/mm²) (EN 13808-3):	30		
Compressive strength (N/mm²) (EN 13808-3):	70		
Resistance to abrasion (EN 13808-3):	100 (loss in mm ³)		

Shrinkage (mm/m) (EN 13808-4):	0.7
Water absorption (g) (EN 13808-5):	0.05
Damp resistance:	excellent
Ageing resistance:	excellent
Resistance to solvents & oils:	excellent (see table)
Resistance to acid & alkalis:	excellent (see table)
Temperature when in use:	from -20°C to +100°C

TAB. 1

CHEMICAL RESISTANCE OF CERAMIC TILING GROUTED WITH KERAPOXY SP (+20°C)			
	Concentration %	Used	
		permanently	sporadically
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	100	+	+
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:			
Sodium hyposulphite		+	+
Calcium chloride		+	+
Ferric chloride		+	+
Sodium chloride		+	+
Sodium chromate		+	+
Sugar		+	+
Aluminium sulphate		+	+

Oils and fuels:			
Petrol, fuels		+	+
Oil of turpentine		+	+
Diesel oil		+	+
Coal tar oil		(+)	+
Olive oil		+	+
Light fuel oil		+	+
Heavy fuel oil		+	+
Petroleum		+	+
Solvents:			
Acetone		(+)	+
Ethylene glycol		+	+
Glycerine		+	+
Methylcellosolve		-	-
Perchloroethylene		-	(+)
Carbon tetrachloride		+	+
Ethyl alcohol		+	+
Trichloroethylene		-	-
Chloroform		-	-
Methylene chloride		-	-
Tetrahydrofuran		-	-
Toluene		+	+
Carbon sulphide		-	(+)
Petroleum ether		+	+
Benzene		+	+
Trichloroethane		+	+
Xylene		+	+
Mercuric chloride (HgCl ₂)	5	+	+
Hydrogen peroxide	1	+	+
	10	+	+
	25	+	+
<i>Legend: + excellent (+) good - poor resistance</i>			

TAB 2 CONSUMO				
TIPO DI PIASTRELLA	FORMATO	SPESSORE	GIUNTO	CONSUMO
	cm	mm	mm	kg/m ²
Klinker	12 x 24	10	8	2,0
Gres-Klinker	10 x 20	10	6	1,8
Gres-Klinker	15 x 22	12	10	2,7
Gres-Klinker	15 x 30	12	10	2,4

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 website www.mapei.com

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