epotech aqua

epotech aqua is a new line of epoxy putties for grouting tile joints. Two-component epoxy putty with no organic solvents. It is waterproof, it has outstanding chemical and mechanical properties and it is easy to apply. Specially recommended for application on mosaics and ceramic tiles with relief.

This material is suitable for grouting joints from 0 to 10 mm in floor and wall tiles, indoors and out. Excellent resistance to chemicals. Suitable for pools and permanently damp environments. Suitable as high adherence grouting material for ceramic tiles with any absorption level and format, for glass mosaic or natural stone.

Recommended use:

- Wall and floor tiles with special chemical resistance.
- Pools and damp environments.
- Tile joints with uniform color and shade, resistant to the passing of time.
- High traffic floors, outdoor floors and terraces.
- Floor tiles on radiant heating.
- High grip adhesive for tile fixing.
- Specially recommended:
- Slate and natural stone.
- Mesh backed glass mosaic.

Materials

- Absorbent and non-absorbent ceramic tiles, including porcelain tiles.
- Tiles with mosaic-like patterns. Please refer to PORCELANOSA catalogues.
- Glass mosaic.
- Natural stone and marble not prone to staining.

Before applying **epotech aqua** on any ceramic floor not included in the list above, carry out a prior test or check with the Technical Department at butech.

- Mosaics in swimming pools (consult their application with the Technical Department at butech)

Substrates

All usual substrates for ceramic tiles laying.

Features

- Two-component colored epoxy putty.
- Easy to apply and clean. This product is free of organic solvents and plasticizers
- Excellent joint color stability.
- Resistance to most chemicals and alkali, even in high concentrations.
- Waterproof joint, no water absorption.
- Excellent adherence and mechanical resistance.

- Resistant to heat and UV radiation.
- Tile joints up to 10 mm.
- Wide color range.

Instructions for use

Preparing the grout

epotech aqua is a two-component epoxy grout. Both components are supplied in the same package with the proportions ready to be mixed. Proportions are the following:

- Component A	epoxy putty	66.6%	1.0 kg
- Component B	catalyst	33.3%	0.5 kg

Do not add any other components to the mix. Below are instructions for preparing this adhesive:

- Use clean tools and containers.
- Shake the catalyst well.
- Mix according to the proportions indicated, making sure all the catalyst is added to the mix. Add component B to component A
- Carry out a first mixing with a masonry trowel so that the catalyst wets the epoxy putty as much as possible.
- Mix with an electric mortar mixer at low speed (400 rpm) until you get a creamy, even and lumpless mass. Use a spiral mixing paddle for epoxy putties.
- Stir with the trowel and apply.
- Do not add any other components to the mix.
- In case the epoxy putty to be used is less than 1,5 kg, use a scale to weigh the quantities to be used and mix at the indicated proportions.

Applying as adhesive.

For laying ceramic tiles or similar, the only recommended technique for **epotech aqua** is laying the tiles on a thin layer with a notched trowel. The notched trowel type will depend on the amount of adhesive to use in laying the tiles which, in turn, depends on the tile size, the characteristics of the tile back, and evenness of the laying surface. The following are the instructions for applying this adhesive:

- Do not use notched trowels larger than 8 x 8 mm.
- Spread a thin layer of adhesive on the substrate, with the smooth side of the trowel.
- Apply a second coat and comb with the notched part of the trowel.
- Distribute the adhesive grooves uniformly. For wall coverings, we recommend applying the adhesive horizontally, whereas for floors, we recommend applying it parallel to the tile's long side.
- Before laying the tile clean any element off the back, that could interfere with the bonding of the mortar.
- Check the wettability of the adhesive, and lay the ceramic on the fresh adhesive.
- Lay the tile on the adhesive until you get a uniform and full contact. We recommend pressing the tile with a slight back and forth movement, to squash the adhesive groove and cover the back of the tile.
- Check periodically, by removing an already placed tile, the level of adhesive coverage. We recommend a minimum level of 75 %

In the case of large formats, laying outdoors, radiant floors, heavy traffic, or overlappings, there must be 100% contact; therefore we recommend using the double bonding method where, besides applying the adhesive on the substrate as mentioned above, a thin layer is applied with the smooth end of the trowel on the back of the tile.

- The maximum adhesive thickness shall not exceed 8 mm.
- Once the setting time has passed, clean the installation joints in their full length, width, and depth.

Applying as grouting material.

Before starting the sealing of joints, check that the adhesive used in the laying of the tiles has totally hardened and that the moisture from the back of the tile has been taken out. This is specially important for mosaics or large format tiles with little absorption and minimum joint.

epotech aqua is a two-component putty that once hardened is virtually impossible to clean, so we recommend to be extremely cautious with the drying times. Under no circumstances let the putty harden on the tile.

We recommend you take these precautions:

- Do not use on substrates which are not totally dry or subject to rise of humidity. Make sure the installation joint is completely dry.
- Check that the tiling joints are free of any element which could interfere with the grouting material. The joints must be clean of bonding materials and have an even depth along the line of at least 3/4 of the tile thickness.
- Clean any other remainders of dust or dirt on the tiles to grout.
- Protect all the elements present in the tile which are sensitive to epoxy putty attack.
- Do not use metallic tools which can scratch the tile surface.

The recommended applying technique is the following:

- Spread the product and press using a hard rubber trowel until you fill all the joint. Take off the excess of product with the same trowel, moving the tool diagonally from the tiles.
- Inmediatly, clean excess of grouting material with an abrasive sponge for epoxy putties slightly wet.
- Pass the sponge diagonally over the joints and rinse in clear water as much as it is needed. Before using the sponge, wring out as much as possible; use the least water possible.
- Repeat the cleaning of the tile with a sponge or dampened cloth with a 50% mix of clear water and denatured alcohol.

As a general rule, we do not recommend to leave tiling joints narrower than 1.5 mm indoors and 5 mm outdoors. Currently, there is a wide variety of spacers to ease the tile setter's job, but we specially recommend **butech's self-leveling spacers**, which, apart from marking the joint width, avoid the appearance of hedges between tiles and tiling defects.

Leave the mortar to harden for a minimum 24 hours before walking on a tiled floor. Adverse environmental factors can delay the hardening of the adhesive, so if in doubt, wait for 36 hours.

Coverage.

The grouting material coverage depends on the tile dimensions, joint width and grouting material density. The formula for this calculation if the following:

Tile dimensions:

- Length a (mm)
- Width b (mm)
- Thickness c (mm)

$$\frac{(A+B) \times C \times J \times 1{,}512}{(A \times B)} = Kg/m^2$$

- Joint width: j (mm)
- Coefficient 1,512 (gr/cm^3)

Coverage table according to tile

Tile	a x b	c	gr / m^2
Floor tile	443 x 443	8,5	58
Floor tile	143 x 900	11	135
Floor tile	165 x 1500	11,5	117
Floor tile	193 x 1200	11	100
Floor tile	193 x 1800	12	104
Floor tile	220 x 900	11	94
Floor tile	230 x 1500	11	83
Floor tile	294 x 1200	11	70
Floor tile	294 x 1800	12	72
Floor tile	297 x 596	8,5	65
Floor tile	330 x 660	10,5	72
Floor tile	400 x 800	11	62
Floor tile	450 x 900	10,5	53
Floor tile	596 x 596	8,5	43
Floor tile	596 x 1200	11,5	44
Floor tile	596 x 1800	11,5	39
Floor tile	800 x 800	8,5	32
Floor tile	1000 x 1000	12	36
Floor tile	1200 x 1200	8,5	21
Wall tile	316 x 592	9,3	68
Wall tile	316 x 900	9	58
Wall tile	333 x 1000	9,2	56
Wall tile	450 x 1200	10,3	48
Wall tile	596 x 1500	11	39
XLIGHT	1200 x 1200	6	15
XLIGHT	1200 x 2700	6	11
XTONE	1500 x 3000	6	9

Cleaning and maintenance

Before starting the application of the grouting material and to avoid later problems, we recommend to refer to the data sheet of the tile supplier and to check for:

- Irregularities or micropores on the tile surface which make difficult to clean the grouting material. If in doubt, we recommend to perform a preliminary test.
- Presence of decoration on the tile surface sensitive to the action of grouts.
- Chemical resistance to epoxy putties.
- Chemical resistance to acid cleaners.
- Scratch resistance with common grouting materials. If in doubt, we recommend to perform a preliminary test.

• Surface stains of epoxy resin films are taken out with organic solvents like alcohol or acetone.

• There are cleaners for epoxy resins, but they are only efficient before the putty has hardened completely.

• Clean any reminders of adhesive with denatured alcohol or acetone before it hardens. Once the epoxy putty has hardened, it can only be taken out mechanically.

• Once the lying finished, clean the tool generously with **epotech cleaner**, denatured alcohol or acetone before it hardens.

• Refer to the maintenance instructions of the supplier of the flooring used.

Preservation

24 months in its original package and protected from moisture and the elements. Store in a dry location, covered and protected from direct sunlight.

Health and safety

- **epotech aqua** is a corrosive chemical which can cause an irritating effect in skin and mucous membranes. Be extremely cautious when handling and applying it.

- We recommend to take the usual precautions in the use of chemicals, as the use of gloves and goggles.

- MSDS available for professionals upon request.

Supplementary Instructions

- We only recommend to apply **epotech aqua** with a hard rubber trowel. It is better not to use soft rubber trowels or any other metallic tool.

- **epotech aqua** is a grout for professional use. Scrupulously follow all the indications about preparation and application of the adhesive.

- Scrupulously respect the mixing proportions between putty and epoxy catalyst.

- The reaction between components A and B is an exothermic reaction (it gives off heat) so an excessive stirring during mixing reduces the adhesive's service life.

- Working times depend on wind, moisture and temperature conditions at the work site, so the working times indicated in this sheet can change in relation to those where the lying is being carried out.

- Low temperatures increase the viscosity of the putty so it is more difficult to apply and clean.

- High temperatures reduce working times.

- Protect from rain and frost at least during the first 24 hours.

- Do not apply when temperature is below +5ºC or above +30ºC.

- Do not use **epotech aqua** in joints wider than 10 mm.

- Do not use on substrates which are not totally dry or subject to rise of humidity. Make sure the installation joint is completely dry.

- Be extremely cautious when lying non-glazed absorbent tiles, marble and other natural stones. Do not apply where you need certain amount of mechanical or chemical resistance. For these cases, use **epotech aqua**.

- Never use for movement joints, either structural, perimetral or partition.

- The layout, width and constructive details of the perimetral and intermediate movement joints, as well as the materials to be used, must be included in the tile laying project.

- Respect all the structural joints present in the substrate.

- Make perimetral movement joints in corners, level changes in the floor and at the height of changes of material.

- As a general rule, make intermediate movement joints which delimit areas as square as possible of 16-25 m^2 outdoors and 50-70 m^2 indoors. They must have a minimum width of 8 mm.

- The technical information included in this data sheet has been gathered from tests at certified laboratories and in the conditions stated by the relevant standards.
- For further information about this product, refer to the **Technical Department at butech**.

Technical Sheet Conditions

- This data sheet does not describe a finished product; it is a grouting material which, together with other products and materials, determines a ceramic tiles lying system. Instructions in this technical sheet have been written based on our experience and technical expertise, but they have to be considered as general recommendations, which together with those for the rest of the products in the system, help the tile-laying professionals in the performance of their job.
- As it is not possible to know all the features and conditions of a building job, professionals must consider it and, if deemed appropriate, perform a previous test to confirm whether the product is suitable for the job.
- The technical sheet cannot reflect all the applications and conditions entailed in the use of a material, so, in situations not described in this sheet, we recommend to perform a previous test and refer to our technical department.
- This sheet has been updated in October, 2023.

Technical Data

Appearance	
Component A	Thick paste in 9 colors.
Component B	Whitish fluid (catalyst)
Dangerousness	Irritating and corrosive (refer to MSDS)
Flammability	No
Preservation time	24 months in a dry place
Mixing proportion:	
Component A	66.6 % 1.0 kg
Component B	33.3 % 0.5 kg
Mix specific weight	1.512 g/cm^3
Application temperature	+5º C and +30º C
Service life	≤ 45 min.
Walkability at 20ºC	24 h
Putting into service	4 days

Resistance		
Traction	EN 1348	> 2.5 N/mm^2
Initial breakage	EN 12003	> 5 N/mm^2
Abrasion	EN 12808-2	215 mm^3
Water absorption	EN 12808-5	≤ 0.06 gr
Heat resistance		-40 °C to 80 °C

Data obtained under laboratory conditions, at 23° C and 50% relative moisture.

Chemical resistance (EN 12808-1)

Acid	Concentration	Permanent contact	Occasional contact
Acetic	2.5%	*	***
	5%	*	**
	10%	*	*
Hydrochloric	37%	**	***
Citric	10%	**	***
Formic	2.5%	*	*
	10%	*	*
Phosphoric	50%	**	***
	75%	*	**
Lactic	2.5%	*	***
	5%	*	**
	10%	*	*
Nitric	25%	*	**
	50%	*	*
Oleic	100%	*	*
Sulphuric	50%	***	***
	100%	*	*
Tannic	10%	**	***
Tartaric	10%	**	***

Legend: *** Optimal ** Good * Limited

Data obtained in normalised laboratory conditions, at 23ºC and 50% relative humidity.

Nutritional substances	Principal nutritional substances (temporary contact)
Vinegar	**
Citrus fruits	**
Ethanol	**
Beer	***
Butter	***
Coffee	***
Casein	***
Glucose	***
Animal fats	***
Fresh milk	**
Malt	***
Margarine	***
Olive oil	***
Soya bean oil	***
Pectin	***
Tomato	**
Yoghurt	**
Sugar	***

Chemical resistance (EN 12808-1)

Fuels and oils	Permanent contact	Occasional contact
Petrol	*	***
Diesel fuel	**	***
Tar oil	**	**
Mineral oil	**	***
Oil	***	***
Turpentine	*	**
Turpentine	*	**

Legend: *** Optimal ** Good * Limited

Data obtained in normalised laboratory conditions, at 23ºC and 50% relative humidity.

Alkalies and salts	Concentration	Permanent contact	Occasional contact
Hydrogen peroxide	10%	**	***
(Oxygenated water)	25%	*	***
Ammonium	25%	*	***
Calcium chloride	Saturated solution	***	***
Sodium chloride (common salt)	Saturated solution	***	***
Sodium hypochlorite (bleach)	1.5%	*	***
	13%	*	*
Sodium hydroxide	50%	***	***
Aluminium sulphate	Saturated solution	***	***
Potassium hydroxide	50%	***	***
Potassium permanganate	5%	**	**
	10%	*	*

Legend: *** Optimal ** Good * Limited

Data obtained in normalised laboratory conditions, at 23ºC and 50% relative humidity.

Chemical resistance (EN 12808-1)

Solvents	Permanent contact	Occasional contact
Acetone	*	*
Ethanol	**	***
Benzene	*	**
Chloroform	*	*
Methylene chloride	*	*
Ethylene glycol	***	***
Perchloroethylene	*	**
Carbon tetrachloride	*	**
Tetrahydrofuran	*	*
Toluene	*	**
Trichloroethylene	*	*
Xylene	*	**

Legend: *** Optimal ** Good * Limited

Data obtained in normalised laboratory conditions, at 23ºC and 50% relative humidity.

Stain-resistant (ISO 10545-14)

Staining agent	Time exposed to staining agent 24 hours	Time exposed to staining agent 30 minutes
Red wine	5	5
Mineral oil	5	5
Tomato sauce	2	5
Mascara	3	5
Coffee	2	5
Hair dye	1	2

Legend: 5= Optimal 4=Very good 3= Good 2= Low 1= Lowest

References

SAP	Product description	Packaging	Palletising
100182213	epotech aqua antracita	1,5 kg can	315 kg / pallet
100182223	epotech aqua blanco	1,5 kg can	315 kg / pallet
100182208	epotech aqua gris	1,5 kg can	315 kg / pallet
100182217	epotech aqua marfil	1,5 kg can	315 kg / pallet
100278467	epotech aqua manhattan	1,5 kg can	315 kg / pallet
100278329	epotech aqua cemento	1,5 kg can	315 kg / pallet
100278474	epotech aqua tabaco	1,5 kg can	315 kg / pallet
100278500	epotech aqua negro	1,5 kg can	315 kg / pallet
100182222	epotech aqua beige	1,5 kg can	315 kg / pallet

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