

# DESIGN EPOXY

## GROUT

29 December 2017

### YOUR SMART ADVANTAGES

- Easy to apply, easy to clean-up
- Colour consistent (colour fully pre-mixed with resin)
- Hygienic
- Highly stain resistant, non-efflorescing
- Water washable during clean-up
- High chemical and abrasion resistance
- Resistant to high pressure cleaning
- Can be used as an adhesive
- Convenient pack format with both components in the same pack and space to mix

### DESCRIPTION

A 2-Part coloured epoxy grout for situations that require high chemical and mechanical demands. Suitable for wall and floor tiles and can also be used as an adhesive.

Fully immersible, perfect for swimming pools. Also suitable for kitchens, hospitals, industrial areas or anywhere where hygiene and/or durability are important.

Supplied in a convenient one pail kit with the colour pre-combined in part A and part B in the lid compartment

### CLASSIFICATION

#### AS ISO 13007 CLASSIFICATIONS

Grout: RG (Reaction Resin Grout)

Adhesive: R2T (Improved Reaction resin adhesive with slip resistance)

### USES

- Walls and floors
- Interior or exterior
- Commercial kitchens
- Industrial areas
- Food and beverage industry

- Paper, leather, textile and chemical industries
- Hospitals
- Water treatment plants
- Laboratories
- Battery loading rooms
- Electroplating rooms
- High traffic
- Fully immersed or always wet (pools, showers, kitchens)
- Where hygiene and chemical resistance is critical
- Areas subjected to harsh cleaning or other chemicals
- Compatible with all tiles (including moisture sensitive)

### PRODUCT CHARACTERISTICS

Part A	Pasty compound with epoxy resin base
Part B	Pasty hardener
Mixed SG	1.6 g/cm <sup>3</sup> (approx.)
Mixing ratio by weight	3:1 (A: B)
Compressive strength	Approx. 65 N/mm <sup>2</sup>
Shear strength	Approx. 14 N/mm <sup>2</sup> (steel / steel)
Adhesive pull strength	Approx. 25 N/mm <sup>2</sup> (stoneware / stoneware)
E modulus	Approx. 4200 N/mm <sup>2</sup> (determined in bending test)

### SURFACE PREPARATION

All surfaces must be clean, dry, and free from dust, grease, wax, oil, laitance, curing compounds and all other contaminants likely to prevent the adhesive bonding. Do not leave water standing in joints. Do not clean tiles with acid cleaners

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## MIXING

- Open both sections of the pail and add the hardener (part B) to the coloured resin (Part A).
- Mix both parts with a drill and suitable mixing paddle for at least 3 minutes.
- Check that the material is thoroughly mixed and consistent throughout (check the sides of the pail).
- Note: For best mixing ensure the material is at approx. 20 °C. At low temperatures or if the product appears to be thick, the compound should be warmed before mixing, if necessary; when the ambient temperature is high, cooling the Design Epoxy in a water bath is recommended. Place Part A and Part B containers separately, in a warm / cooling bath for at least 10 – 15 minutes. Then allow the material to return to ambient temperature (20 – 23 °C)

When mixing part kits the quantities of part A and part B must be weighed precisely. Always mix part B before weighing out required amount.

Required mixing ratio 3 parts A to 1 part B, by weight or volume.

Note: Volume measurement only applies when Part A & Part B's temperature are between 20°C – 25°C

## APPLICATION

### When used as a grout

#### 1. Filling the joint

1.1 After mixing, the epoxy grout can be applied using a squeegee or grout trowel. Work well into the joints. Remove as much excess from the face of the tile by trowelling diagonally across the joint. This will make the clean-up easier.

1.2 Do not use product that has started to harden in the pail. Mix a new batch.

1.3 Mix smaller quantities if the material cannot be used in the required time.

Important note: For highly porous, matte finish, unglazed and textured tiles, test must be performed to determine whether the tiled surface can be cleaned out without leaving residues.

#### 2. Washing the tile face

2.1 Wait until the grout has just started to stiffen. The epoxy grout can be cleaned as early as 1 hour but may be longer depending on site temperature and conditions. The recommended clean-up time is between 1 to 5 hours.

2.2 Using a damp (not wet) clean soft sponge remove all remaining grout from the tile face. If a milkish colour starts to appear, this indicates the grout is still wet and not yet ready for clean-up.

2.3 Rinse the sponge frequently with clean water.

2.4 After the initial wash, let the tile and joints to dry.

2.5 After further 30 – 60 minutes repeat the clean-up process. Use new and clean damp soft sponge

2.6 Allow the tile and joints to dry. Inspect the surfaces for cleanliness immediately after the wash water dries. Any visible haze can be removed using damp soft sponge (warm water).

It is absolutely essential that the tiles are cleaned again and again with a clean soft sponge to eliminate haze. It is important that the haze be completely removed before the grout cures. This is particularly important on porous, unglazed, matte finish or textured tiles. It may be impossible to remove epoxy grout left uncleaned (or excess) on unglazed and textured tiles if left overnight.

3 Haze removal. If the recommended washing method is followed, it is unlikely that haze will appear. For cases that haze starts to appear, follow the following haze removal method (note: this only applies to glazed surfaces):

Haze can be removed using warm water and white scouring pad. Wet the scouring pad with warm water. Lightly scrub the tile face until haze starts to disappear. The process maybe repeated until the haze has been removed. It is important to do a spot test prior to full cleaning to ensure that it will not damage or scratch the tile.

More than 2 day old haze may not be possible to remove haze. Chemical cleaning solution may be necessary to use. Contact Bostik Technical Services for advice.

### When used as an adhesive

- After mixing, apply the adhesive to the prepared substrate using the appropriate notched trowel to ensure full bedding of the tile.
- Place tiles into wet, sticky adhesive.
- Press tile firmly into adhesive before it skins. If skinned, remove the material.
- Periodically remove tile to inspect bedding and adhesive transfer onto the back of the tile.
- Do not use product that has started to harden in the pail.

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The product is best to use as adhesive and grout particularly for mosaics.

When using as an adhesive make sure the ambient conditions as well as the temperature of the substrate and tile are all above 15 °C and does not fall below 12 °C for at least 48 hours after bonding.

All workmanship must be carried out in accordance to AS3958 and good workmanship practices.

Special Instructions for the repair of damaged or washed out cement joints

An effective repair can only be achieved if the following conditions are met:

- a) The material is applied in the joint at least 2–3 mm thick
- b) ASA Design Epoxy grout bonds directly to the tile sides.
- c) The correct preparation is carried out (see below)

### Preparation:

1. Scratch, chisel or mill out the joints to a depth of at least 2–3 mm.
2. Remove mortar residue from the tile sides.
3. Thoroughly clean the joints using lime and grease dissolving cleansers. (Grease residues are particularly problematic as they act as a de-bonding agent.)
4. Dry the joints (with compressed or hot air if needed)

Note: Ensure that the tiles are well bonded and sound. If needed re-bond any individual loose tiles. Individual tiles can be re-bonded with ASA Design Epoxy. For larger areas it should be determined why the tiles have de-bonded and suitable remediation must be carried out. If there is any uncertainty contact Bostik for advice before work commences.

### WORKING AND CURING TIMES

Working life and curing of the product are very dependent on site conditions. The reaction will be faster when warm and slower when cool.

Approximate Working Times

Initial Cure (clean up)	1 – 5 hrs.
Pot life	50 mins (20°C) 40 mins (30°C)
Setting time at 20°C	>6 hours (grout) >12 hours (adhesive)
Ready for foot traffic	16 hours (20°C) 48 hours (10°C)
Final cure time for full load	7 days (20°C) 14 days (10°C)
Commissioning of showers or any contact with water (as adhesive and grout)	7 days (20°C) 14 days (10°C)
Ready for continuous water immersion (as adhesive and grout)	7 days (20°C) 14 days (10°C)

### COVERAGE

On site coverage will vary widely as it is dependent on a large number of variables. These include but are not limited to: application technique, substrate texture, wastage, trowel angle, trowel wear, contact coverage and flatness. As such the following coverage is intended as a guide only.

#### When used as a grout:

The material consumption can be calculated according to the following formula:

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

A = Tile length (mm)      B = Tile width (mm)

C = Joint width (mm)      D = Joint depth (mm)

#### When used as an adhesive

Part A & B when mixed yields approximately 3.0 litres.

When used with a 10mm trowel, approximate coverage is 1.0 – 1.5 m<sup>2</sup>

### CLEANING

ASA Design Epoxy can be removed from tools and mixing equipment before initial set using a damp rag. After initial set, the use of suitable epoxy chemical remover and/or mechanical removal will be necessary. If allowed to harden (final set) it will be very difficult to remove without damaging the surface.

### STORAGE AND SHELF LIFE

Product will remain useable for 12 Months from date of manufacture when kept in a dry store in the original, unopened containers.

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All material shall be stored under cover in a manner that will prevent damage preferable on pallets and protected from excessive heat and moisture and between 10 – 35°C. Do not freeze.

## IMPORTANT NOTES

- This is a two part system. Part A must be used with Part B in the correct ratio (3 parts A to 1 part B, by weight or volume). Volume measurement is only applicable if the material's temperature is between 20°C – 25 °C. If the product appears to be thick, the compound should be warmed before mixing, if necessary; when the ambient temperature is high, cooling the Design Epoxy in a water bath is recommended
- Read the Material Safety Datasheet before using.
- Use full kits whenever possible. Otherwise weigh parts carefully to ensure correct ratio is used. Required mixing ratio can be measured by weight or by volume.
- Mixing at an incorrect ratio will affect performance.
- Ensure the parts are well mixed as insufficient mixing will affect performance.
- Suitable for horizontal and vertical joints 1.5 – 12 mm wide.
- Minimum joint depth is 2 mm.
- Ensure the surface is between 10 – 35 °C. Surfaces that have been heated significantly, by sunlight for example, should not be worked on.
- Surfaces and joints must be dry before installation. If not, adhesion and overall performance may be adversely affected.
- This product will be influenced by temperature. The reaction will slow down in cool conditions and will speed up when warm. Always account for this on the jobsite.
- Further work service such as installation of silicone, sealants, plumbing fixtures and others, must be made after 24 – 48 hours (depending on ambient condition) applying the epoxy grout. It is important that the grout does not stick and achieved its initial set.
- Possible staining when used on porous and absorptive tile. Apply a small test area to determine the product's suitability.
- The product contains aggregates that may possibly scratch delicate glazed or glass tile surface. Apply a small test area to determine the product's suitability.
- Design Epoxy grout is not a replacement for waterproofing membrane.
- May slightly fade, darken or discolour from direct UV exposure in exterior conditions.
- The Design Epoxy does not contain cement, thus it will not cause efflorescence. Any presence of efflorescence can be attributed from the tile adhesive, screed, or any other cement based material under the tile. It is important that the epoxy grout is well bonded and packed into the joints to prevent leeching out of water soluble salts from the cement based materials.

- It is recommended that tests be carried out to ensure the chosen clean-up method is suitable and all residues can be removed. This is especially important for unglazed or textured tiles. It may be impossible to remove epoxy grout left uncleaned (or excess) on unglazed and textured tiles if left overnight.
- It is recommended to use Bostik's approved cleaning system. Use of other manufacturer's epoxy cleaner may cause discolouration of the grout.
- If there is any uncertainty contact Bostik for advice before work commences

## CHEMICAL RESISTANCE PROPERTIES

Material Type	Examples
Organic acids	Formic acid 5 % / Lactic acid 20 % / Citric acid 20 % / Acetic acid 10 % / Tartaric acid 10 % / Oxalic acid 10 %
Inorganic acids	Chromic acid 10 % / Conc. HCl / Sulphuric acid 70 % / Nitric acid 10 % / Phosphoric acid 50 %
Alkalis	Concentrated caustic potash solution / Ammonia solution / Concentrated caustic soda lye / Chlorine bleach 15 %
Fuels, Oils	Petrol / Hydraulic oil / Diesel oil / Motor oil / Light and heavy heating oil
Solvents	Ethanol (ethyl alcohol) / Perchloroethylene / Glycerine
Other	Concrete-attacking water / cleaning agents / Disinfectants / Beverages

The tolerance tests were carried out on cured samples, which were placed for up to 10 weeks into each product listed below.

+ = excellent resistance (no deterioration or damage of the samples)

(+) = limited resistance (resists in case of temporary projection)

- = non-resistant (sample deterioration within <24 hours)

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(Bi) 2-ethylhexy phthalate	+	Glycols	+
1,1,1, trichloroethane	+	Spindle oil	+
Amyl acetate	(+ )	Motor Oil	+
Butyl acetate	(+ )	Paraffin oil	+
Methyl glycol acetate	(+ )	Turpentine oil	+
Acetone	(+ )	Hydraulic oil	+
Acetic acid, 10%, 5%	+	Silicone oil	+
Glacial acetic acid	-	Vegetable oil	+
Boric acid 3%	+	Concentrated sodium hydroxide	+
Concentrated chlorhydric acid	+	Isopropyl acetate	(+ )
Chromic acid 105	+	Concentrated alkaline detergent	+
Citric acid 20%	+	Soda	+
Accumulator acid	+	Methanol	+
Acid oil	+	Methylisobutylcet one	(+ )
Lactic acid 10%, 20%, 5%	+	Disinfecting cleaner AP3	+
Wine acid 10%	+	Sanitary cleaner	+
Formic acid 10%	(+ )	Multi-use cleaner	+
Formic acid 3%, 5%	+	Hydrogen peroxide 30%	+
Fat acids at temperatures below 50°C	(+ )	Phenol 1% in water	+
Nitric acid 10%, 20%	+	Phenol 20% in water	-
Nitric acid 50%	-	Dibutyl phthalate	+
Oxalic acid 10% in water	+	Propanol	+
Phospheric acid 30%	+	Semi-hexane	+
Sulphuric acid 30%, 50%, 70%	+	Ammonium solution	+
Sulphuric acid 98%	-	Sodium acetate solution 20%	+
Butanol or butyl alcohol	+	Calcium hydroxide solution 20%	+
Isopropyl alcohol	+	Potassium carbonate solution 20%	+
Benzoic aldehyde	(+ )	Sodium carbonate solution 18%	+
Benzene	(+ )	Ammonium carbonate solution 10%, 50%	+
Beer	+	Aluminium chloride solution 10%	+
Butanone or methyl ethyl ketone	(+ )	Barium chloride solution 10%, 40%	+
Butyl glycol	+	Calcium chloride solution 20%, 40%	+

Diesel fuel	+	Magnesium chloride solution 35%	+
Chloroform	-	Sodium chloride solution	+
Ammonium chloride	+	Zinc chloride solution 50%	+
Elthyl chloride	(+ )	Discolouring chloride solution 15%	+
Methylene chloride	-	Ammonium nitrate solution 50%	+
Cola	+	Silver nitrate solution 50%	+
Cresol 60 % in water	-	Calcium nitrate solution 50%	+
Cyclohexane	+	Potassium permanganate solutions 5%	+
Cyclohexanol	(+ )	Potassium persulphate solution 50%	+
Dioxane	+	Aluminium sulphate solution 40%	+
Dimethylformamide	-	Ammonium sulphate solution 50%	+
Diglycol	+	Ferrous sulphate solution 30%	+
Diglycolmethyl phthalate	+	Sodium sulphate solution	+
Dimethyl phthalate	+	Sodium sulphate solution 20%	+
Diocetyl phthalate	+	Zinc tetrachloride solution 20%	+
Chlorinated water	+	Sugar solution 10%	+
Water containing CO2	+	Copper sulphate 15%	+
Gas	+	Tetrachloroethylene	+
Acetic ester	(+ )	Carbon tetrachloride	(+ )
Ethanol	+	Tetrahydrofurane	-
Ether	(+ )	Toluene	(+ )
Petroleum ether	+	Trichloroethylene	+
Ethylene glycol	+	Triethanolamine	+
Formalin	+	Triisobutyl	+
Fuel, light and heavy mazout	+	Wine	+
Furfural	+	White spirit	+
Glycerine	+	Xylene	(+ )
1,2 propylene glycol	+		

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## PRECAUTIONS IN USE

Complete details on each of the products mentioned are available on the product Safety Data Sheets. To ensure no harm is caused to persons using Bostik products, it is recommended that all concerned read the appropriate Safety Data Sheets. Visit [www.bostik.com/au](http://www.bostik.com/au) for copies.

**For emergency information contact the Poisons Information Centre, phone 131 126 or the Emergency Response Service, phone 1800 033 111.**



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