

ET5104

Two-part Epoxy for Bonding tiles and stones

ET5104 is a two component, easy to use, epoxy based tile adhesive and grout. It is suitable for all types of tiles and stones on the floor and wall. It is especially recommended for hygiene-sensitive areas and also areas that require sterile conditions.

When mixing two components, it forms a smooth, creamy & thixotropic paste, which is easy to apply, easy to clean, and easy to maintain. At the same time, it also provides high mechanical and chemical resistance properties. The resultant is, an easy-to-use, high-durability grout, which is available in an attractive range of colors

FEATURE

- For grout joints between 2 mm - 12 mm.
- Easy to mix, creamy consistency high productivity grout.
- Can be applied on wall and floor.
- Highly thixotropic - non-sag formula can be used as both grout and adhesive on floor & wall.
- Easy to apply
- Early flexural properties
- High resistance to abrasion
- High Compressive strength
- Low water absorption results in watertight joints
- Resistance to stain & chemicals.
- Hygienic in service & would not allow bacterial growth
- Low VOC - Over curing full reaction takes place.
- Available in 12 widely used colors.

CONFORMITY TO STANDARDS

- RG - as per ISO 13007 - 3
- R2T - as per ISO 13007
- ANSI A118.3 - chemical resistant, water cleanable, tile setting & grouting epoxy.
- US FDA in accordance with 21 CFR 175.300

LIMITATIONS

- Suitable for joint widths between 2 mm & 12 mm.
- Epoxy grout applications should not be done in excessive heat. After full curing ET5104 would resist temperatures between 0°C – 80°C.
- When ET5104 is used on exterior installations, color variations may occur over time, especially with lighter shades due to ultra violet rays or environmental contaminants.
- Please ensure compatibility of the tiles/stones with the mixed material. Please refer to the methodology of application section and the literature of the tile/stone manufacturer taking suitable precaution. It is always advisable to test a small sample area before grouting the entire area.

USAGE

- Anti-stain properties make it suitable for maintenance - free use in residential, commercial, & hospitality sector.
- High bond strength makes it suitable for use with ceramic tile, porcelian, and vitrified tiles, large format tiles & stones, low thickness slabs, natural stone, artificial stone, etc.
- High compressive strength along with its chemical resistant properties make it suitable for industrial applications like chemical industries, laboratories, production & storage workshops, paper mills, dyeing plants, tanneries, food industries, breweries, commercial kitchens, battery rooms, workshops, dairies, & processing plants. Please refer to the chemical resistance chart in case of extreme industrial conditions.
- Resistance to bacteria & fungal growth makes it suitable for hospitals, operation theatres, clinics, swimming pool and kitchens.
- Low water absorption and resistance to a wide degree of temperature variation ensures that it can be used for wet areas, swimming pools, spas, jacuzzis, bathrooms, public toilets, and showers.
- Low abrasion or high abrasion resistance makes it suitable for usage in heavy traffic areas like subway stations, shopping malls and airport terminal buildings & even industrial use.

METHOD OF APPLICATION

Surface preparation

- The tiles/stones should be firmly set & the adhesive or mortar should be completely dry.
- Remove the spacers should before grouting. Grout joints must be clean and free of standing water, dirt, dust & foreign matter.
- Remove the excess of adhesive or mortar from the joint area.
- Do not clean the tiles/stones with acid cleaners. All joints to be clean by washing with water/detergent. Any water or moisture present during grouting will reduce the performance of the grout.
- Ensure the joints are completely dry before grouting.

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Mixing

- Ensure proper use of personal protective equipment (PPE) before mixing.
- Take 4 parts Resin (component A), 1 part Hardener (component B) i.e., (4:1 by weight and 3.75:1 by volume)
- Mix the components thoroughly for 2-3 minutes to get a homogeneous paste and consistent color.
- Avoid prolonged mixing as it traps air and shortens pot life.
- The workable mixed grout can be used for up to 80 minutes at 25°C.
- Wash tools immediately with water before the epoxy hardens. It is very difficult to remove after it has hardened.
- In case of mixing with a mechanical mixer, recommended a slow 100 rpm mechanical mixer.
- No water to be added in the mix.

PRODUCT APPLICATION

Tile Grouting

- Before the application process assure proper use of PPE.
- The application is done easily using tool squeegee, or also be done using rubber float, squeegee, or other appropriate tool.
- The squeegee is used to force the grout into the joints in a continuous manner, leaving it flush with the tile edge ensure the joints are firmly filled & free of voids.
- Wipe off any excess material within 30 - 90 minutes with a sponge or an appropriate tool. Use a damp sponge to clean the tiled surface. Use the sponge in a circular motion to get optimum results.
- Utilize only a minimum amount of water in cleaning which will otherwise impair the final chemical resistance.
- The area should be cordoned off to prevent any accidental damage to the grout.
- For vertical surfaces, non-abrasive cloth or smooth pad can be used to loosen any film and remove it without removing the epoxy from the joints.
- If any touch-ups are required, should be done within 30-45 minutes of application.
- Recommended to complete the final cleaning within 10-20 minutes from the initial cleaning.

Tile Grouting

- Once all the components are correctly mixed, apply on the substrate with the help of notch trowel.

- Press tile/stone firmly against the adhesive bed with slight shear.
- Ensure proper material transfer for good bonding.
- At regular interval check the transfer of material on tile/stone.

METHOD OF APPLICATION

- Keep the working area protected for 48 hours after application. For swimming pools- it is required to be kept protected for 72 hours.
- Normal water can easily clean ET5104. The use of harsh chemicals is not recommended and should be avoided.
- Performance and durability would depend on the maintenance of the installed area.
- Acid cleaning for a household can be done only after 10-14 days of application.

COVERAGE

$$\frac{\rho \times J_w \times T_t \times (T_l + T_b)}{(T_l + J_w) \times (T_b + J_w)}$$

Where:

ρ : is density of mixture, g/cc

J_w : is the joint width, mm

T_t : is the tile thickness, mm

T_l : is the length of tile, mm

T_b : is the breadth of tile, mm

Coverage is calculated in kg/sqm

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PRODUCT DETAILS

Properties	ET5104
Physical State	A – colored resin paste B – Neutral color hardener paste
Pot life	> 80 min, 25°C
Full cure	7 days
Temperature range	0°C – 80°C
Mix density	1.58 g/cc

SHELF LIFE

24 months from the date of packaging, when stored in a cool, dry environment away from sunlight.

PACKAGING

5 kg bucket containing both Component A (Resin) - 4 kg and Component B (Hardener) - 1 kg.

PRECAUTIONS FOR USE

There may be irritation caused in eyes and skin in case of contact for a very long time. Please seek medical help if the problem persists for a long time. It is recommended applying the product with gloves. Please refer MSDS before using.

Do not use this product in rooms without ventilation.

ANSI 118.3 SPECIFICATION

Classification Code	Test Characteristics	As per ANSI	ET5104
Water cleanability	Spreadable and cleanable after mixing	80 min	95 min
Setting time	Initial setting time	>120 min	175 min
	Service setting time	<7days	6 days
Shrinkage	After 7- day cure	<0.25%	0.06%
Sag in vertical joints	In 10 mm tile gap	No change	No change
Bond strength to quarry tile	Shear bond strength after 14 days	>6.9 MPa	8.5
Compressive strength	After 7 days	>24.2 MPa	33
Tensile strength	After 7 days	>6.9 MPa	8.7
Thermal shock resistance	Shear bond strength immersion and hot and cold water bath	>3.5 MPa	4.2

CONFORMANCE TO ISO 13007-1 AS PER ADHESIVE

Classification Code	Test Characteristics	As per ISO 13007	ET5104
R2 – Improved reaction resin adhesive	Shear adhesion strength	>2 MPa	8
	Shear adhesion strength after water immersion	>2 MPa	6.5
	Shear adhesion strength after thermal shock	>2 MPa	5.2
	Open time: tensile adhesion strength	>0.5 MPa after not less than 20 min	3.5
T – Slip resistance	Vertical slip resistance	<0.5 mm	No slip

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CONFORMATION TO ISO 13007-3 AS PER GROUT

Classification Code	Test Characteristics	As per ISO 13007	ET5104
RG – Reaction resin grout	Abrasion resistance	< 250 mm ²	194 mm ²
	Flexural strength after 28 days conditioning	> 30 MPa	32 MPa
	Compressive strength after 28 days conditioning	> 45 MPa	47 MPa
	Shrinkage	< 1.5 mm/m	0.57 mm/m
	Water absorption after 240 min	< 0.1 g	0.05 g

GROUT CONSUMPTION IN KG/CM²

Size of tile in mm	Joint width in mm					
	2	4	6	8	10	12
300 x 300 x 8	0.16	0.32	0.48	0.64	0.80	0.96
300 x 300 x 10	0.20	0.39	0.59	0.79	0.99	1.18
300 x 300 x 12	0.23	0.47	0.70	0.93	1.17	1.40
300 x 450 x 8	0.13	0.27	0.40	0.54	0.67	0.81
300 x 450 x 10	0.17	0.33	0.50	0.66	0.83	1.00
300 x 450 x 12	0.20	0.39	0.59	0.79	0.99	1.18
450 x 450 x 8	0.11	0.22	0.33	0.43	0.54	0.65
450 x 450 x 10	0.13	0.27	0.40	0.54	0.67	0.81
450 x 450 x 12	0.16	0.32	0.48	0.64	0.80	0.96
450 x 600 x 8	0.10	0.19	0.29	0.38	0.48	0.57
450 x 600 x 10	0.12	0.24	0.35	0.47	0.59	0.71
450 x 600 x 12	0.14	0.28	0.42	0.56	0.70	0.84
600 x 600 x 8	0.08	0.16	0.25	0.33	0.41	0.49
600 x 600 x 10	0.10	0.20	0.31	0.41	0.51	0.61
600 x 600 x 12	0.12	0.24	0.36	0.49	0.61	0.73

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CHEMICAL RESISTANCE CHART

Substance	Concentration	Splash Contact	>30 mins Contact	>24 hours Contact
Acetic Acid	2.5%	●	●	●
	5%	●	●	●
	10%	●	●	●
	100%	●	●	●
Benzoic Acid	5%	●	●	●
Citric Acid	10%	●	●	●
Formic Acid	2.5%	●	●	●
	10%	●	●	●
Hydrochloric Acid	10%	●	●	●
Hypochlorous Acid	4%	●	●	●
Lactic Acid	5%	●	●	●
Nitric Acid	10%	●	●	●
	25%	●	●	●
	50%	●	●	●
	100%	●	●	●
Oleic Acid		●	●	●
Oxalic Acid	10%	●	●	●
Phosphoric Acid	80%	●	●	●
Sulfuric Acid	20%	●	●	●
	50%	●	●	●
Tartaric Acid	50%	●	●	●
Tannic Acid	50%	●	●	●
Ammonia Solution	25%	●	●	●
Calcium Chloride	10%	●	●	●
Hydrogen Peroxide	1%	●	●	●
	10%	●	●	●
Potassium Permanganate	1%	●	●	●
	10%	●	●	●
Sodium Bicarbonate	20%	●	●	●
Sodium Hydroxide	50%	●	●	●
Acetone	NA	●	●	●

● Resistance

● Limited resistance

● Not resistance

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CHEMICAL RESISTANCE CHART

Substance	Splash Contact	>30 mins Contact	>24 hours Contact
Butyl Acetate	●	●	●
Carbon Tetra Chloride	●	●	●
Chloroform	●	●	●
Dichlorome- thane	●	●	●
Ethanol	●	●	●
Ethylene Glycol	●	●	●
Glycerol	●	●	●
Methyl Ethyl Ketone	●	●	●
Toluene	●	●	●
Xylene	●	●	●
Beer	●	●	●
Bleach	●	●	●
Butter	●	●	●
Citrus Juice	●	●	●
Coffee	●	●	●
Coke	●	●	●
Glucose	●	●	●
Hair Dye	●	●	●
Milk	●	●	●
Sauce	●	●	●
Sugar	●	●	●
Tea	●	●	●
Toilet Cleaner (acidic)	●	●	●
Toilet Cleaner (basic)	●	●	●
Toilet Cleaner (neutral)	●	●	●
Tomato Ketchup	●	●	●
Turmeric	●	●	●
Vegetable Oil	●	●	●
Vinegar	●	●	●
Wine	●	●	●

● Resistance

● Limited resistance

● Not resistance