MAPEI

Keralastic and Keralastic T

IN COMPLIANCE WITH EUROPEAN STANDARDS EN 12004 R2 MAPEI REACTION RESIN ADHESIVE FOR CERAMIC TILES

IN COMPLIANCE WITH EUROPEAN STANDARDS EN 12004 R2T MAPEI REACTION RESIN ADHESIVE FOR CERAMIC TILES

CE EN 12004

Two-component, high-performance, polyurethane adhesives for ceramic tiles and stone material

CLASSIFICATION IN COMPLIANCE WITH EN 12004

Keralastic is an improved (2) reaction adhesive (R) classified as class R2.
Keralastic T is an improved (2) reaction adhesive (R) and slip resistant (T) classified as R2T.

*Conformity of **Keralastic** and **Keralastic T** is declared in **ITT** certificates **n° 25040320/Gi (TUM)** and **n° 25040471/Gi (TUM)** respectively, issued by the Technische Universität München laboratory (Germany).*

WHERE TO USE

Indoor and outdoor, bonding of wall and floor ceramic tiles, stone material mosaics, etc. on:

- screeds, renders, concrete, asphalt, wood, metal, PVC, reinforced polyester, fibre-cement, gypsum, gypsum board, gypsum panels, etc.

Some application examples

- Bonding ceramic tiles, stone material and all types of mosaics in showers and on sheets used for prefabricated bathrooms.
- Bonding ceramic tiles and mosaics on wooden work surfaces or in kitchens in order to achieve a waterproof substrate.
- Bonding ceramic tiles, stone material and mosaics on balconies, external terraces, domes or flat roofs subject to foot traffic.
- Bonding natural stones and reconstructed stone (marble of every type, slate, etc.) also subject to movement and size variation due to the absorption of water (class C of size stability according to MAPEI standards).
- Bonding ceramic tiles and stone material on surfaces subject to vibrations and deflections.

TECHNICAL CHARACTERISTICS

Keralastic and **Keralastic T** are two-component, solvent and water free adhesives which are flexible and waterproof. They are made up of a polyurethane base (component A) and a special hardener (component B). On mixing the two components together, the result is a paste with the following properties:

- good workability;
- excellent durability and resistant to ageing;
- perfect adhesion to all surfaces used in building;
- hardens by chemical reaction without shrinkage (until it becomes highly resistant);
- high deformability;
- in the case of **Keralastic T**, highly thixotropic: it can be applied vertically without slump and without letting even heavy or large tiles slip. The slipping strength is in compliance with EN 1308.

RECOMMENDATIONS

- Do not use on very damp surfaces or where there is a risk of rising damp.
- The packs are pre-measured, therefore mixing errors are impossible. Do not use partial quantities. A wrong mixing ratio could cause damage during the curing process.
- Use the products in temperatures between +10°C and +30°C.
- In case of use on surfaces subject to continuous immersion in water, consult the MAPEI Technical Services Department beforehand.
- Do not use **Keralastic** and **Keralastic T** to bond transparent glass materials.

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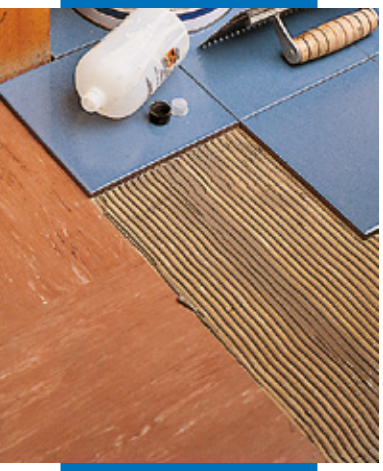

Laying on an old PVC floor

Waterproofing and laying in a prefabricated shower unit

- We advise against using these products on particulary porous or light coloured natural stones to bond such materials, use **Ultrabond Eco PU 2K**.

APPLICATION PROCEDURE

Preparing the substrates

The substrates must be cured, mechanically strong, free of loose particles, grease, oil, paint, wax etc. and be sufficiently dry.
Cement substrates must not be subject to shrinkage after the installation of the tiles. During spring and summer, renders must be cured for at least one week for every centimetre of thickness and cementitious screeds must be cured for at least 28 days, unless they have been made with MAPEI special binders for screeds such as **Mapecem**, **Mapecem Pronto**, **Topcem** or **Topcem Pronto**. Where this is not observed, the adhesion of **Keralastic** and **Keralastic T** to the substrate will be greatly compromised.
Rust on iron surfaces must be removed by sandblasting. It is recommended to reinforce gypsum, gypsum board and anhydrite substrates with a coat of **Primer EP** or **Primer MF**.

Preparing the mix

The two components of **Keralastic** and **Keralastic T** are supplied in ready-to-mix cans:
- component A: grey or white, 94 parts by weight;
- component B: transparent straw, 6 parts by weight.

The ratio of the resin (component A) and the hardener (component B) is fixed and any modification could cause incorrect hardening of the product.
Pour the hardener (component B) into component A and mix well until a uniform grey or white paste is obtained. It is advisable to use a low speed electric stirrer to ensure perfect mixing and avoid overheating the mix, which would reduce the working time. Use the mix within 30-40 minutes of mixing.

Applying the mix

Apply to the substrate a uniform layer of **Keralastic** or **Keralastic T** with a notched trowel. Choose a trowel that will give a coverage to the back of the tiles of at least 65-70% (see “Consumption”).
For exterior installations, the tile backs must be completely covered with the adhesive.
When both waterproofing and bonding are required, for example on wooden kitchen worktops, one of two procedures may be followed:
- spread **Keralastic** or **Keralastic T** on the substrate with a flat trowel to a thickness of at least 2 mm; then rework the surface with a notched trowel so as to line it all over, but without reducing the thickness to less than 1 mm. This thickness must be maintained even after the tiles have been installed, especially when the tile backs have high lugs or ribs;
- spread **Keralastic** or **Keralastic T** with a flat trowel to a uniform thickness of 1 mm for waterproofing and, after hardening (in any case within 24 hours), apply a second layer of **Keralastic** or **Keralastic T** with a notched trowel.

Installing the tiles

Tiles must be absolutely dry.
Apply firm pressure to the tiles to ensure good contact and covering of the back. If the layer of fresh **Keralastic** or **Keralastic T** is also to act as a waterproofing membrane, make sure that any ribs and lugs do not go through the layer.
If **Keralastic** or **Keralastic T** is used for installing onto particularly deformable substrates, all coverings larger than 5x5 cm must be installed with wide joints.
The open time of **Keralastic** and **Keralastic T** under normal temperature and humidity conditions is approximately 50 minutes. Any adjustment must be carried out within 90 minutes from installation.
The setting time is strictly tied to the ambient temperature (see table below).

Setting time of Keralastic and Keralastic T in relation to the temperature:

Temperature (°C)	30	25	20	15	10
Time (hours)	2	3	6	8	20

GROUTING AND SEALING

Joints between the tiles can be grouted after 12 hours with the appropriate MAPEI cementitious or epoxy grouts, available in a variety of different colours.
Expansion joints must be sealed with the special MAPEI sealants.

SET TO LIGHT FOOT TRAFFIC

Floors are set to light foot traffic after 12 hours.

READY FOR USE

Surfaces are ready for use after 7 days.

Cleaning

Tools, buckets and clothes can be easily cleaned with alcohol before hardening sets in. Hardened **Keralastic** and **Keralastic T** can be cleaned mechanically or with **Pulicol 2000**.

CONSUMPTION

Bonding of ceramics and stone material:
- Mosaics and small size tiles (trowel No. 4): 2.5 kg/m^2
- Normal size tiles (trowel No. 5): 3.5 kg/m^2
- Large size tiles, marble, stones (back buttering): 5 kg/m^2

PACKAGING

Keralastic and **Keralastic T** are available in double metal drums of:
10 kg (9.4 kg/m^2 component A + 0.6 kg/m^2 component B);
5 kg (4.7 kg/m^2 component A + 0.3 kg/m^2 component B).

STORAGE

Keralastic and **Keralastic T** are stable for at least 24 months when stored in sealed drums. Component B (hardener) must be stored in warm place to avoid crystallisation during cold weather (at least at +10°C). Should crystallisation occur, re-dissolve by warming before use.

TECHNICAL DATA (typical values)

In compliance with:

– European EN 12004 as R2, R2T
– ISO 13007-1 as R2, R2T

PRODUCT IDENTITY		component A	component B
Consistency:		thick paste	fluid liquid
Colour:	**Keralastic** **Keralastic T**	white - grey white - grey	straw transp. straw transp.
Density (g/cm³):	**Keralastic** **Keralastic T**	1.50 1.56	0.93 0.93
Dry solids content (%):		100	100
Brookfield viscosity (mPa·s):	**Keralastic** **Keralastic T**	800,000 (# F - rpm 2.5) 1,800,000 (# F - rpm 2.5)	26 (# 1 - rpm 50) 46 (# 1 - rpm 50)

APPLICATION DATA (at +23°C and 50% R.H.)		
Mix ratio by weight:	component A : component B = 94 : 6	
Consistency of mix:	very viscous	
Density of mix (kg/m³):	**Keralastic** **Keralastic T**	1450 1520
Brookfield Viscosity (mPa·s):	**Keralastic** **Keralastic T**	400,000 (# F - rpm 5) 1,250,000 (# F - rpm 2.5)
Pot life:	30-40 minutes	
Application temperature range:	from +10°C to +30°C	
Open time (according to EN 1346):	50 minutes	
Adjustability time:	90 minutes	
Setting time: **– initial:** **– final:**	 6 hours 8 hours	
Set to light foot traffic:	12 hours	
Ready for use:	7 days	

FINAL PERFORMANCE	
Shear adhesion strength according to EN 12003 (N/mm²): **– initial shear adhesion strength:** **– shear adhesion strength after water immersion:** **– shear adhesion strength after thermal shock:**	 2.6 2.0 2.4
Resistance to ageing:	high
Resistance to solvents and oils:	good
Resistance to acids and alkalis:	good
Resistance to temperature:	from –40°C to +100°C
Deformability:	highly deformable

Installing Carrara marble on wooden substrate with White Keralastic

Verde Alpi green marble flooring in the Rolex building hall (Bienne - Switzerland)

An example of an installation of ceramic or marble on a metal structure (stairs)

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Waterproofed bath-tub and shower

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

SAFETY INSTRUCTIONS FOR PREPARATION AND INSTALLATION

Keralastic and **Keralastic T** component A are irritant for eyes and skin, both components A and B may cause sensitisation if they come into contact with the skin of those predisposed.
Keralastic and **Keralastic T** component B are corrosive, may cause serious burns and are harmful if swallowed.
Keralastic component B is also harmful if it comes into contact with the skin. The product contains low molecular weight epoxy resins that may cause sensitisation if cross-contamination occurs with other epoxy compounds.
During use wear protective gloves and goggles and take the usual precautions for handling of chemicals. If the product comes in contact with the eyes or skin wash immediately with plenty of water and seek medical attention.
Furthermore, **Keralastic** component A and B and **Keralastic T** component A are hazardous for aquatic life.
Do not dispose of these products in the environment.
For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT ONLY 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 website www.mapei.com

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.
The most up-to-date TDS can be downloaded from our website www.mapei.com.
ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

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