ULTRABOND PU 2K

Two-component, solvent-free, high performance polyurethane adhesive with very low emission level of volatile organic compounds (VOC) for ceramic and stone tiles

CE EN 12004 · R2T · 0474 · GEV-EMICODE EC 1 PLUS very low emission

CLASSIFICATION ACCORDING TO EN 12004

Ultrabond PU 2K is an R2T class reactive (R) improved (2) slip-resistant (T) adhesive.

*The conformity of **Ultrabond PU 2K** is declared in TT certificates no. 15/10709-1380 and no. 15/10709-1380-S issued by LGAI Technological Center S.A. of Bellaterra - Barcelona (Spain).*

WHERE TO USE

Bonding ceramic tiles, stone tiles, and all types of mosaics on interior and exterior wall and floor substrates normally used in the building industry such as screeds, render, concrete, cement-fibre panels, gypsum, plasterboard, pre-fabricated gypsum panels, etc. and on particularly difficult substrates such as metal, PVC, polyester, etc.

Some application examples

- Bonding all types of ceramic tile, stone tile, and all types of mosaics in showers and on sheet steel used to make prefabricated bathrooms.
- Bonding ceramic and mosaic on wooden work surfaces and kitchen tops.
- Bonding ceramic tiles, stone tiles, and mosaics on balconies and terraces, accessible flat roofs, and domed roofs.
- Bonding recomposed and natural stone, including materials subjected to large movements and dimensional variations in contact with water (class C according to MAPEI internal standards, such as Green Alpine).
- Bonding ceramic and stone tiles on substrates subjected to high vibrations and deformation.

TECHNICAL CHARACTERISTICS

Ultrabond PU 2K is a two-component, solvent and water-free, elastic, waterproof adhesive with very low emission level of volatile organic compounds (EMICODE EC1 Plus) made up of a polyurethane base (component A) and a special catalyzer (component B).

When the two components are mixed together, they form a paste with the following characteristics:

MAPEI

- good workability;
- excellent durability and resistance to ageing;
- perfect adhesion to all types of substrate normally used in the building industry;
- hardens by chemical reaction without shrinking to form a tough, strong bond;
- high elasticity;
- can be applied on vertical surfaces without slumping and without allowing tiles to slip, including large, heavy tiles;
- suitable for users allergic to epoxy and epoxy-polyurethane products.

The slip resistance of the product complies with EN 12004 standards.

RECOMMENDATIONS

- Do not use on damp surfaces or if there is a risk of capillary rising damp.
- The kits are pre-dosed to prevent mixing errors. Do not use partial quantities of the product and do not guess the amounts to be mixed: hardening will be affected if the two components are not mixed together correctly.
- The components must be mixed together at a temperature between +5°C and +30°C.
- Contact MAPEI Technical Services before using the product on surfaces permanently immersed in water.
- Do not use **Ultrabond PU 2K** to bond transparent glass.

APPLICATION PROCEDURE

Substrate preparation

Substrates must be well cured, strong, free of loose portions, grease, oil, paint, wax etc. and sufficiently dry.

Cementitious substrates must not shrink after bonding tiles. In good weather, therefore, render must be cured for at least one week per cm of thickness and cementitious screeds must be cured for at least 28 days, unless they are made using a special MAPEI ready-mixed screed binder such as **Mapecem**, **Mapecem Pronto**, **Topcem** or **Topcem Pronto**.

Metall substrates must be sandblasted to remove all traces of rust.

For gypsum and anhydrite, we recommend consolidating the surface by applying a coat of **Primer EP** or **Primer MF**.

Preparation of the mix

Ultrabond Eco PU 2K is supplied in two pre-dosed tubs:

- component A: grey or white, 88 parts by weight;
- component B: brown, 12 parts by weight.

The mixing ratio between the resin (component A) and catalyser (component B) must be strictly adhered to; any variation may affect the hardening process of the product.

Pour the catalyser (component B) into the container of component A and blend together with a mixer at low speed to form a smooth, even grey or white paste.

A low-speed electric mixer is preferable for this operation so that the paste is perfectly blended without overheating, which would reduce its workability time. Apply the adhesive within 30-40 minutes of mixing.

Spreading the mix

Apply an even layer of **Ultrabond Eco PU 2K**on the substrate with a notched spreader. Use a spreader that allows at least 65-70% of the back of the tiles to be wetted (see “Consumption” section).

When bonding tiles to exterior surfaces, make sure the back of the tiles is completely wetted.

When the adhesive is used to both waterproof the surface and bond tiles, such as when bonding tiles to wooden kitchen tops, apply an even layer of **Ultrabond PU 2K** around 1 mm thick with a straight spreader to waterproof the surface, then apply a second layer of **Ultrabond PU 2K** with a notched spreader when the first layer has hardened (within 24 hours).

Bonding tiles

Tiles must always be dry when they are bonded.

Press the tiles down well to ensure they are in contact with the adhesive and that the back of the tiles are wetted. If the layer of wet **Ultrabond PU 2K** also acts as a waterproofing layer, make sure the ribs on the back of the tiles do not penetrate completely through the adhesive.

When using **Ultrabond Eco PU 2K** to bond tiles to deformable substrates, tiles larger than 5x5 cm must be positioned, so they have large gaps between them.

In normal conditions (temperature and humidity level) the open time of **Ultrabond PU 2K** is approximately 20 minutes. Final adjustment of the tiles must be carried out within 70 minutes of bonding.

The setting time of the adhesive depends on the surrounding temperature (see the following table).

Temperature	30°C	25°C	20°C	15°C	10°C
Setting time	2 h	4 h	5 h	7 h	10 h

While laying tiles it is recommended to use levelling systems such as **MapeLevel EasyWDG**, **MapeLevel ProWDG**, **MapeLevel Easy** or **MapeLevel EasyClick** to maintain the correct size of grouts and reduce height unevenness between tiles.

GROUTING AND SEALING

Grout the gaps between the tiles after 12 hours using a suitable cementitious or epoxy MAPEI grouting mortar, available in a wide range of colours.

Seal expansion joints using a suitable MAPEI sealant.

If necessary, clean, maintain and protect the surfaces using the specific products from the **UltraCare** range.

SET TO FOOT TRAFFIC

Floors set to foot traffic after 12 hours.

READY FOR USE

Surfaces are ready for use after 7 days.

CLEANING

Ultrabond PU 2K is easy to remove from tools, buckets and clothing before it hardens with alcohol.

Once hardened **Ultrabond PU 2K** must be removed mechanically or with **Pulicol 2000**.

CONSUMPTION

Bonding ceramic and stone:

- mosaics and small tiles (no. 4 spreader): 2.5 kg/m^2
- normal size tiles (no. 5 spreader): 3.5 kg/m^2

- large tiles, marble, and stone (double-buttering technique): 5 kg/m²

PACKAGING

Ultrabond PU 2K is supplied in twin metal tubs comprising:

- 10 kg kits (8.8 kg component A + 1.2 kg component B).
- 5 kg total weight (4.4 kg component A + 0.6 kg component B).

STORAGE

Ultrabond PU 2K remains stable for at least 12 months if the tubs are sealed. Component B (catalyser) must be stored in a warm area to prevent it crystallising at cold temperatures (minimum +10°C).

If the catalyser crystallises it must be warmed up before use.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the Safety Data Sheet, available from our website www.mapei.com.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

Compliant to the standard:
- Euronorm EN 12004 (R2T)
- ISO 13007-1 (R2T)

PRODUCT IDENTITY		
	component A	**component B**
Consistency:	thixotropic paste	liquid
Colour:	grey/white	dark
Density:	1.684 g/cm³	1.2 g/cm³
Dry solids content:	100 %	100 %
Brookfield viscosity:	6,000,000 mPa·s (rotor F - 1 rpm)	150 mPa·s (rotor 1 - 100 rpm)
EMICODE:	EC1 Plus - very low emission	

APPLICATION DATA (at +23°C and 50% R.H.)	
Mixing ratio in weight:	88:12
Consistency of mix:	thixotropic paste
Density of mix:	1.5 g/cm³

Brookfield viscosity:	2,500,000 mPa·s (rotor F - 1 rpm)
Pot life of mix:	20-30 minutes
Application temperature:	from +5°C to +30°C
Open time (EN 1346):	20 minutes
Adjustment time:	70 minutes
Setting time: **– start:** **– finish:**	 4,5 hours 7 hours
Set to foot traffic:	12 hours
Ready for service:	7 days

FINAL PERFORMANCE	
Adhesion according to EN 12003: **– initial adhesion** **– adhesion after immersion in water:** **– adhesion after thermal shock:**	 > 2 N/mm² > 2 N/mm² > 2 N/mm²
Resistance to ageing:	high
Resistance to solvents and oil:	good
Resistance to acids and alkalis:	good
Resistance to temperatures:	from -40°C to +100°C
Deformability:	good

CERTIFICATES AND CLASSIFICATION	
Ris. IMO 61 (67) FTCP - Ann. 1, part 2 and 5:	low flames spread characteristics

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 effect at the

time of the MAPEI product installation. For the most up-to-date TDS and warranty information, please visit our website at www.mapei.com.

ANY ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED IN OR DERIVED FROM THIS TDS SHALL VOID ALL RELATED MAPEI WARRANTIES.

Mapei S.p.A.

Via Cafiero, 22, 20158, Milano

+39-02-376731 www.mapei.com mapei@mapei.it

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