

ULTRAFLEX S2

High-performance, very deformable cementitious adhesive, with extended open time and no vertical slip. Especially suitable for bonding large-sized ceramic, porcelain ceramic and natural stone materials.



CLASSIFICATION ACCORDING TO EN 12004

Ultraflex S2, C2TES2 class cementitious (C), improved (2), non-slip (T), extended open time (E), very deformable (S2) adhesive.

WHERE TO USE

- Bonding of all types and sizes of ceramics (single-fired, double-fired, porcelain tiles, clinker, terracotta, etc.) on internal and external floor and wall applications.
- Bonding stone on internal and external surfaces (not sensitive to humidity).
- Bonding of insulation materials such as EPS, stone wool, glass wool, wood chip cement boards, sound-absorbing panels, cork, etc., in interior surfaces.

Some application examples

- Bonding ceramic tiles (double-fired, single-fired, porcelain tiles, clinker, etc.) and stone materials (not sensitive to humidity) on the following surfaces:
 - Cement-based screeds and heated floors.
 - Cementitious render or lime and cement-based mortars.
 - Gypsum boards, provided they are securely fixed.
 - Overlaying ceramic and stone on existing floors (ceramic, marble, etc.).
- Bonding floors subjected to intense traffic.
- Application of floor and wall coverings on substrates treated with waterproofing membranes made from **Mapelastic**.

TECHNICAL CHARACTERISTICS

Ultraflex S2 is a white and grey coloured powder made from cement, selected graded sand, a high amount of synthetic resins and special admixtures according to a formula developed in the MAPEI research laboratories. When mixed with water, **Ultraflex S2** forms a mortar with the following characteristics:

- low viscosity and, therefore, good workability;
- high thixotropy; **Ultraflex S2** may be applied on vertical surfaces without slumping and without allowing tiles to slip, even large, heavy tiles. Tiles may be bonded in place starting from the upper part of surfaces, working downwards without having to place spacers;
- excellent capacity to absorb deformation in the substrate and in the tiles;
- adheres perfectly to all materials normally used in the building industry;

- thick layers of adhesive harden without any significant shrinkage and without reducing in thickness to form a very strong layer;
- particularly long open and adjustment times to make laying operations easier.

RECOMMENDATIONS

Do not use **Ultraflex S2** in the following cases:

- On wooden and compressed solid wood surfaces.
- On metal, rubber, PVC, and linoleum surfaces.
- On marble and natural stone floorings prone to staining or efflorescence.
- On natural or artificial stone floorings subject to movement due to moisture.
- On surfaces exposed to heavy movements or on precast concrete elements.
- When surfaces need to be opened to traffic shortly after application.

APPLICATION PROCEDURE

Preparation of substrate

All substrates where **Ultraflex S2** will be applied must be cured, sufficiently dry, strong and have no crumbling areas or traces of grease, oil, varnish or wax.

Cementitious substrates must not shrink after bonding tiles. Therefore, in good weather, 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 special MAPEI screed binders such as **Mapecem**, **Mapecem Pronto**, **Topcem** or **Topcem Pronto**. If the surface is too hot due to direct sunlight, cool it down with water.

Gypsum substrates and anhydrite screeds must be perfectly dry, strong and free of dust.

It is absolutely necessary for these surfaces to be abraded and then treated with **Primer G** or **Eco Prim VG**, and in areas exposed to excessive moisture, they must be primed with **Triblock P**.

Preparation of the mix

Blend **Ultraflex S2** with clean water to obtain a smooth, lump-free mix. Let the mix stand for approximately 5 minutes, then blend again.

For every 23 kg of **Ultraflex S2** grey, a mixture should be made with 6.50 - 7.00 liters of water (for every 100 units of dry mortar by weight, this ratio corresponds to 28-30 units of water), and for every 23 kg of **Ultraflex S2** white, a mixture should be made with 6.50 - 7.00 liters of water (for every 100 units of dry mortar by weight, this ratio corresponds to 28-30 units of water). When mixed in this way, **Ultraflex S2** has an approximate pot life of 8 hours.

Spreading the mix

Apply **Ultraflex S2** on the substrate with a notched trowel. To guarantee a good bond, apply a thin layer of **Ultraflex S2** on the substrate using the smooth side of the spreader (stripping) and then and then a suitable scalloped trowel using it, apply layer of **Ultraflex S2** to create the required thickness (combing).

Type and size of ceramic plates to be adhesived:

- In outdoor applications and when laying large ceramic tiles, polish the surface after installing heated floors. Additionally, apply the back-buttering technique to ceramic tiles in heavy load areas, water tanks, and swimming pools.
- When installing thin porcelain floor tiles, it is recommended to apply the adhesive to the tiles using the back-buttering technique.
- In applications using a notched trowel, ensure that there are no gaps to prevent the risk of ceramic tile breakage while the floor is in use.

Bonding tiles

Tiles do not need to be wet before they are laid. However, if the backs of the tiles are particularly dusty, wash them by dipping them in clean water. When applying the tiles, press down firmly to guarantee good buttering. The open time for **Ultraflex S2** is at least 30 minutes in normal weather and humidity conditions. When bonding conditions are not ideal (direct sunlight, dry wind, high temperatures, etc.), or if the substrate is particularly absorbent, this time may reduce to only a few minutes. Keep checking the adhesive to make sure skin does not form on the surface and that it is still wet. If the adhesive is no longer wet, run the notched trowel over the adhesive again to re-activate open time, or, if the adhesive has already start to set, remove it and

spread a new layer of fresh adhesive. Do not wet the surface of the adhesive if skin forms. Water does not dissolve the skin and creates instead a film that impedes a good bond. Final adjustment of the tiles must be carried out within 45 minutes of bonding. Floor and wall coverings bonded with **Ultraflex S2** must be protected from water and rain for at least 24 hours and from freezing weather and direct sunlight for at least 5 to 7 days.

Adhesive of insulation materials with the heap technique

Apply **Ultraflex S2** with a trowel at the required thickness depending on the weight of the panels and the condition of the surfaces for adhering sound insulation or isolation panels using the cluster method.

GROUTING AND SEALING

Tile joints may be grouted after 4 to 8 hours on walls and after 24 hours on floors. Use a MAPEI cementitious or epoxy grout, available in a wide variety of colours. Seal expansion joints using a special MAPEI sealant.

SET TO LIGHT FOOT TRAFFIC

Floors set to foot traffic after approximately 24 hours.

POLISHING

Surfaces can be polished after around 14 days.

READY TO USE

Surfaces become ready for use approximately 14 days later. However, tanks and swimming pools are ready for use 21 days later.

CLEANING

Clean tools and containers with water while **Ultraflex S2** is still fresh. Clean the surface of tiles with a damp cloth before the adhesive hardens.

CONSUMPTION

Bonding of ceramic tiles;

- per 1 mm thickness: 1,2 kg/m²

Bonding of boards;

- for application with notched trowel around 6-7 kg/m²
- heap method: 4-6 kg/m²

PACKAGING

Ultraflex S2 grey and white are supplied in 23 kg paper bags.

STORAGE

Ultraflex S2 may be stored for 12 months in its original packaging in a dry place.

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.tr.

PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

Complies with the following standards:

- EN 12004 - C2TE S2

PRODUCT IDENTITY

Consistency: powder

Color: grey, white

Bulk density (kg/m³): 1600

Dry solids content (%): 100

APPLICATION DATA (at +20°C and 50% R.H.)

Mixing ratio: 100 parts of **Ultraflex S2** with 28-30 parts of water by weight

Consistency of mix: paste

Density of mix (kg/m³): 1600

pH of mix: >12

Pot life: 8 hours

Application temperature: between +5°C and +35°C

Open time (according to EN 1346): 30 minutes

Adjustment time: approx. 60 minutes

Grouting joints in wall tiles: after 4-8 hours

Grouting joints in floor tiles: after 24 hours

Set to light foot traffic: 24 hours

Ready to use: 14 days for surfaces, 21 days for tanks and swimming pools

FINAL PERFORMANCE

Adhesion strength according to EN 1348 - after 28 days (N/mm²):

– initial adhesion : 3,0

– adhesion after application of heat source: 3,6

– adhesion after immersion in water: 1,0

– adhesion after freeze-thaw cycles: 1,2

Resistance to alkalis: excellent

Resistance to oils: excellent (poor to vegetable oils)

Resistance to solvents: mükemmel

Service temperature: -30°C to +90°C

Deformability according to TS EN 12004: S2 – very deformable (> 5mm)

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.

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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.

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