KERAFLEX MAXI S1

High-performance, deformable cementitious grey or white adhesive, with extended open time and no vertical slip, very low emission of volatile organic compounds and with fully offset residual Greenhouse Gas emissions. Especially suitable for the installation of large-size porcelain tiles and natural stone





BENEFITS AND FEATURES

- Can be applied at high thicknesses (up to 15 mm)
- No sinking of heavy and large tiles into the adhesive on floors
- No vertical slip of heavy and large tiles on the walls
- Excellent workability
- Excellent wetting of the tile back
- Deformable
- Highly thixotropic
- Extended open time
- Very low emission of VOC
- Residual Greenhouse Gas emissions fully offset

CLASSIFICATION ACCORDING TO ISO 13007-1 AND EN 12004

Keraflex Maxi S1 is a C2TES1 class cementitious (C), improved (2), non-slip (T), extended open time (E), deformable (S1) adhesive.

*Conformity of **Keraflex Maxi S1** is certified according to certificate TT No. 14-83310-550-S (LGAI) issued by the APPLUS laboratory, LGAI Technological Center Bellaterra (Spain).*

CO_2e FULLY OFFSET PRODUCTS

Residual Greenhouse Gas emissions measured throughout the life cycle of this product using Life Cycle Assessment (LCA) methodology, verified and certified with EPDs, have been offset for the year 2026 through the acquisition of carbon credits in support of forestry protection projects. For more details on emission calculations and offsetting projects, visit mapei.com.

WHERE TO USE

- Bonding all types and sizes of ceramic tiles (double-fired, single-fired, porcelain tiles, klinker, terracotta, etc.) at thickness up to 15 mm on irregular internal and external substrates and render without skimming the surface prior to bonding
- Bonding stone on internal and external surfaces (stable stone, not sensitive to humidity)
- Bonding all types of mosaic on interior and exterior surfaces, also in swimming pools

Some application examples

- Bonding ceramic tiles (double-fired, single-fired, porcelain, klinker, etc.), ceramic and glass mosaic and stone (if stable in damp environments) on the following substrates:
  - self-levelling cementitious screeds and anhydrite screeds (after priming the surface with a suitable acrylic primer such as **Primer G** or **Eco Prim T Plus**)
  - heated floors
  - sound, well-cured concrete floors
  - cementitious render and lime-mortar render
  - gypsum-based render (after the application of an acrylic primer such as **Primer G** or **Eco Prim T Plus**)
  - plasterboard, walls made of fibre cement panels, precast wall panels
  - **Mapeguard Board**, multi-purpose construction panels
  - waterproofing membranes made from **Mapelastic**, **Mapelastic Smart**, **Mapelastic Easy**, **Mapelastic AquaDefense** or **Mapegum WPS**
  - uncoupling, anti-fracture waterproofing membrane such as **Mapeguard UM 35** or **Mapeguard WP 200**
- Overlaying ceramic and stone on existing floors (ceramic, marble, etc.).
- Bonding floors subjected to intense traffic.
- Bonding tiles and strips with profiled or hollow backs (porcelain tiles, klinker, single-fired, and terracotta) on internal and external surfaces.
- Installing tiles on precast concrete walls and concrete substrates.
- Bonding tiles in swimming pools and tanks.

TECHNICAL CHARACTERISTICS

Keraflex Maxi S1 is a grey or white 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.

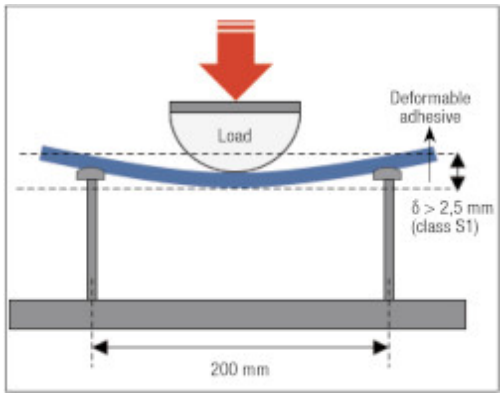
The environmental impacts during the entire life cycle of **Keraflex Maxi S1** have been assessed through the LCA (Life Cycle Assessment) methodology and reported in EPD n° EPD-IES-0009679 for the grey version and n° EPD-IES-0015570 for the white version (Environmental Product Declaration) in accordance with ISO 14025 standard, certified and published by The International EPD System.

Keraflex Maxi S1 is a product with very low emission of volatile organic compounds (VOC), which safeguards the health and safety of installers and final users. It is certified as EC1 Plus by the German association GEV.

Keraflex Maxi S1 helps earn important LEED credits.

When mixed with water, **Keraflex Maxi S1** forms a mortar with the following characteristics:

- low viscosity and, therefore, good workability
- high thixotropy; **Keraflex Maxi S1** 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
- good capacity to absorb deformations in the substrate and tiles. S1 class adhesive: transversal deformability > 2.5 mm measured according to the test method described in ISO 13007-1 and EN 12004



- adheres 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 **Keraflex Maxi S1** in the following cases:

- on not sufficiently cured concrete
- on wood or wooden conglomerates
- on metal, rubber, PVC, and linoleum surfaces
- for slabs of marble and natural stone which are subject to efflorescence or staining
- with natural stone or composite slabs subject to movements caused by dampness
- when floors need to be put back into service quickly

Do not add water to the mix once it starts to set.

APPLICATION PROCEDURE

Preparation of the substrate

Substrates 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 **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 (maximum residual humidity 0.5%, 0.3% in case of heated screeds), strong and free of dust. They must also be treated with an acrylic primer such as **Primer G** or **Eco Prim T Plus**.

Preparation of the mix

Blend **Keraflex Maxi S1** with clean water to obtain a smooth, lump-free mix. Let the mix stand for approximately 5 minutes, then blend again.

Use approximately 7-7.5 litres of water for each 25 kg bag of powder of **Keraflex Maxi S1**. When mixed as described above, the mix lasts approximately 8 hours.

Spreading the mix

Apply **Keraflex Maxi S1** on the substrate with a notched spreader. Use a spreader with a notch size that guarantees optimum buttering of the back of the tile.

To guarantee a good bond, apply a thin layer of **Keraflex Maxi S1** on the substrate using the smooth side of a spreader and then immediately apply a further layer of **Keraflex Maxi S1** in the thickness required using a suitable spreader, depending on the type and size of the tiles.

If the substrate is very absorbent and in case of high temperatures, before applying **Keraflex Maxi S1**, it is recommended to wet the substrate in order to extend the open time of the adhesive.

In case of exterior installation, installation of large format ceramic tiles, heating floors, floors to be polished after laying or subject to heavy loads, application in water tanks or swimming pools, apply the back-buttering technique by spreading the adhesive on the back of the tiles to ensure complete buttering.

In particular, for the floor laying of thin-thickness porcelain stoneware tiles, it is recommended to apply the adhesive also on the reverse of the plate (with a suitable notched trowel) in order to ensure the total absence of voids, avoiding therefore risks of breakage in operation.

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 and allow them to dry thoroughly prior to installation.

When applying the tiles, press down firmly to guarantee good buttering.

The open time for **Keraflex Maxi S1** 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 **Keraflex Maxi S1** 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.

While laying tiles, it is recommended to use levelling systems of **MapeLevel** line to maintain the correct size of grouts and reduce height unevenness between tiles.

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.

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

SET TO LIGHT FOOT TRAFFIC

Floors set to foot traffic after approximately 24 hours.

READY FOR USE

Surfaces may be put into service after 14 days. Basins and swimming pools may be filled up 21 days after the application of **Keraflex Maxi S1**.

CLEANING

Clean tools and containers with water while **Keraflex Maxi S1** is still wet.

Clean the surface of wall and floor coverings with a damp cloth before the adhesive hardens.

CONSUMPTION

1.2 kg/m² per mm of thickness.

PACKAGING

Keraflex Maxi S1 is supplied in grey and white 25 kg bags.

STORAGE

Keraflex Maxi S1 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.ae.

TECHNICAL DATA (typical values)

Complies with the following standards:
– Euronorm EN 12004 (C2TES1)
– ISO 13007-1 (C2TES1)

PRODUCT IDENTITY	
Consistency:	powder
Colour:	grey and white
Bulk density:	1400 kg/m³
Dry solids content:	100%
EMICODE:	EC1 Plus - very low emission

APPLICATION DATA (at +23°C and 50% R.H.)	
Mixing ratio:	100 parts in weight of **Keraflex Maxi S1** with 28-30 parts in weight of water
Consistency of mix:	paste
Density of mix:	1600 kg/m³
pH of mix:	more than 12
Pot life of mix:	more than 8 hours
Application temperature:	+5°C to +40°C

Open time:	> 30 minutes
Adjustment time:	approximately 45 minutes
Grouting joints in wall tiles:	after 4-8 hours
Grouting joints in floor tiles:	after 24 hours
Set to foot traffic:	24 hours
Ready for service:	14 days

FINAL PERFORMANCE	
Adhesion: **– initial adhesion (after 28 days):** **– adhesion after application of heat source:** **– adhesion after immersion in water:** **– adhesion after freeze-thaw cycles:**	 2.0 N/mm² 2.0 N/mm² 1.1 N/mm² 1.3 N/mm²
Resistance to alkalis:	excellent
Resistance to oils:	excellent (poor for vegetable oils)
Resistance to solvents:	excellent
In-service temperature range:	-30°C to +90°C
Deformability according to ISO 13007-1 and EN 12004:	S1 - deformable (> 2.5 mm, < 5 mm)

IMPORTANT NOTES

Whilst we try to ensure that any advice, recommendations or information given in our literature is accurate and correct, we have no control over the circumstances in which our product is used. It is therefore important that installers satisfy themselves that the product and conditions are suitable for the envisaged application. No warranty can be given or responsibility accepted other than, that the product supplied by us will meet our written specification. The installer should ensure that our latest product data and safety information sheets have been consulted prior to use.

Please refer to the current version of the Technical Data Sheet, available from our website, www.mapei.ae.

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.ae.

ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

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