



# Keraflex Maxi S1



**High performance, deformable cementitious adhesive with extended open time and no vertical slip, for ceramic tiles and stone material. Especially suitable for the installation of large-size porcelain tiles and natural stone**

## **CLASSIFICATION IN COMPLIANCE WITH ISO 13007-1**

**Keraflex Maxi S1** is a deformable (S1), improved (2) slip resistant (T) cementitious adhesive (C) with extended open time (E) of class C2TES1.

## **WHERE TO USE**

- Interior and exterior bonding, adhesive up to 15 mm thick, of ceramic tiles of every type and size (single and double fired tiles, porcelain tiles, klinker, terracotta, etc.) on uneven substrates and renders, without having to level the flooring beforehand.
- Interior and exterior bonding of stone materials (provided that they are not sensitive to moisture).
- Spot bonding of insulating material in interiors such as expanded polystyrene, rock and glass wool, Eraclit® (wood-cement boards), sound-deadening panels in polystyrene, cork, etc.

## **Some application examples**

- Bonding ceramic tiles (double-fired, single-fired, porcelain tiles, klinker etc.) and stone materials (provided that they are not sensitive to moisture) on conventional substrates such as:
  - cementitious screeds and underfloor heating installations;
  - cementitious renders or lime and cement-based mortar;
  - gypsum board as long as firmly fixed.
- Installation of ceramic and stone material tiles on existing flooring (ceramic, marble, etc.).

- Installation of floors subjected to heavy traffic.
- Laying ceramic in areas with poor ventilation or close to inhabited buildings.
- Installation of floor and wall coverings on substrates waterproofed with **Mapelastic**.
- Interior and exterior bonding of tiles or strips (porcelain tiles, klinker, single-fired, terracotta) with highly profiled ribs or lugs.

## **TECHNICAL CHARACTERISTICS**

**Keraflex Maxi S1** is a grey and white powder composed of cement and fine graded sands. It contains a high quantity of synthetic resins and special additives according to a formulation developed in MAPEI's Research & Development laboratories. A mortar with the following features is obtained when **Keraflex Maxi S1** is mixed with water:

- low viscosity, therefore easily workable;
- harden, even when very thickly applied, without appreciable shrinkage and without decreasing in thickness, until acquiring a considerable resistance;
- highly thixotropic: **Keraflex Maxi S1** can be applied on a vertical surface without slumping or letting even heavy and large tiles slip. Tiles can be installed from the top towards the bottom without using spacer pegs;

# Keraflex Maxi S1



Bonding porcelain tiles

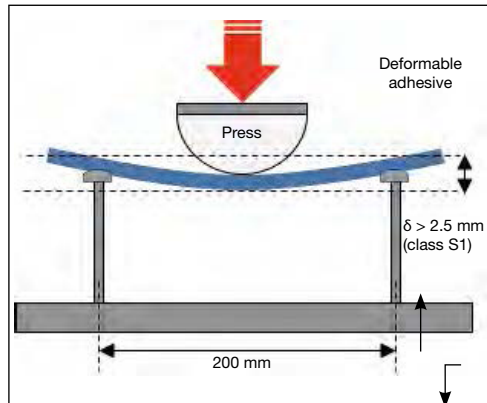


Installation of natural stone in exterior



Installation of large-size ceramic tiles

- good capability to accommodate the different deformation of the covering from the substrate. Adhesive classified S1: transversal deformability  $> 2.5$  mm measured according to test methods described in EN 12004.



- perfect adherence to all materials normally used in building;
- particularly extended open and adjustability time, facilitating installation.

## RECOMMENDATIONS

Do not use **Keraflex Maxi S1** in the following cases:

- on wood and wooden conglomerates;
- on metal, rubber, PVC and linoleum surfaces;
- with marble and natural stone slabs subject to efflorescence or stains;
- with natural or artificial stone material slabs subject to movement due to moisture;
- on precast concrete or subject to strong movement;
- when surfaces need to be ready for traffic in a short time.

## APPLICATION PROCEDURE

### Preparing the substrate

All substrates receiving **Keraflex Maxi S1** must be cured, mechanically resistant, solid, clean, free of cracks, loose material, oil, grease, wax and dust and sufficiently dry. Cementitious substrates should not be subject to shrinkage after the installation of ceramic tiles, therefore during spring and summer renders must cure at least one week for each cm of thickness and cementitious screeds must have an overall cure time of at least 28 days, unless they are made with special binders for MAPEI screeds such as **Mapecem**, **Mapecem Pronto**, **Topcem** or **Topcem Pronto**.

Dampen with water to cool surfaces heated from exposure to sunlight.

Gypsum substrates and anhydrite screeds must be perfectly dry, sufficiently hard and free from dust. It is absolutely essential that

they must be abraded, then treated with **Primer G** or **Eco Prim T**, while areas subject to extreme dampness must be primed with **Primer S**.

### Preparing the mix

Mix 25 kg **Keraflex Maxi S1** with 7.75 – 8.25 kg clean water until a smooth, lump-free paste obtained. Leave to rest approximately 5 minutes and re-stir.

The pot life of the mix obtained is approximately 8 hours.

### Applying the mix

**Keraflex Maxi S1** is applied to the substrate using a notched trowel. Choose a trowel that allows for a complete coverage of the backs of the tiles to be installed.

To achieve good adhesion, first spread a thin layer of **Keraflex Maxi S1** on the substrate using the straight edge of the trowel.

Immediately after apply the desired thickness of **Keraflex Maxi S1** using a suitable notched trowel, depending on the type and size of the tiles.

For outdoor ceramic tile floors and walls, sizes greater than 900 cm<sup>2</sup>, floors that must be levelled on site or subject to heavy loads, or when applying in swimming pools and basins to be filled with water, spread the adhesive on the back of the tile (back-buttering) in order to ensure a complete coverage.

As an alternative, for laying large-sized tiles or slabs indoors, to improve buttering on the back of the tile, the mix may be made more fluid by increasing the amount of water.

### Installing the tiles

There is no need to wet the tiles before installing them. Only with very dusty backs is it recommended to dip the tiles in clean water.

Tiles should be installed under a firm pressure to ensure a good coverage of the adhesive.

In normal temperature and humidity conditions, the open time of **Keraflex Maxi S1** is at least 30 minutes. Unfavourable weather conditions (direct sun, wind, high temperatures, etc.) or a highly absorbent substrate can reduce the open time, even to just a few minutes.

Continuous checks must be made to ensure that a skin does not form on the surface of the spread adhesive, which should stay fresh. If not, re-freshen the adhesive by re-spreading with a notched trowel. It is not recommended to wet the adhesive with water once a skin has formed because, instead of dissolving the skin, the water will form an anti-adhesive film.

If necessary, tiles should be adjusted within 60 minutes after installation.

Tiling installed with **Keraflex Maxi S1** must not be washed or exposed to rain for at least 24 hours and must be protected from frost and strong sun for at least 5-7 days.

## TECHNICAL DATA (typical values)

In compliance with:

– European EN 12004 as C2TES1  
– ISO 13007-1 as C2TES1

### PRODUCT IDENTITY

Type:	powder
Colour	grey or white
Bulk Density (kg/cm <sup>3</sup> )	1,400
Dry solids content (%):	100

### APPLICATION DATA (at +23°C and 50% R.H.)

Mixing ratio:	100 parts <b>Keraflex Maxi S1</b> with 31-33 parts water by weight.
Consistency of mix:	pastry
Density of the mix (kg/m <sup>3</sup> ):	1,500
pH of mix:	> 12
Pot life (hrs):	> 8
Application temperature (°C):	from +5 to +35
Open time (according to EN 1346) (mins):	> 30
Adjustability time (mins):	60
Ready for grouting on walls (hrs):	after 4-8
Ready for grouting on floors (hrs):	after 24
Set to light foot traffic (hrs):	after 24
Ready for use (days):	14

### FINAL PERFORMANCES

Tensile adhesion strength in compliance with EN 1348 (N/mm <sup>2</sup> ):	
– initial tensile adhesion strength (after 28 days):	2.6
– tensile adhesion strength after heat ageing:	2.5
– tensile adhesion strength after water immersion:	1.1
– tensile adhesion strength after freeze/thaw cycles:	1.3
Resistance to alkalis:	excellent
Resistance to oils:	excellent (poor to vegetable oils)
Resistance to solvents:	excellent
Temperature when in use (°C):	from -30 to +90
Deformability according to EN 12004:	S1 - deformable

## Spot-bonding insulating materials

For spot-bonding sound-deadening or insulating panels, apply **Keraflex Maxi S1** with a trowel or a float, in the necessary thickness required by the evenness of the surfaces and by the weight of the panels.

## GROUTING AND SEALING

Wall joints can be grouted after 4-8 hours and floor joints can be grouted after 24 hours with the specific MAPEI cementitious or epoxy grouts, available in different colours. Expansion joints must be sealed with the specific MAPEI sealants.

## SET TO LIGHT FOOT TRAFFIC

Floors are set to light foot traffic after approx. 24 hours.

## POLISHING

Surfaces can be polished after approximately 14 days.

## READY FOR USE

Surfaces are ready for use after approximately 14 days.

## Cleaning

Tools and containers should be cleaned with plenty of water while **Keraflex Maxi S1** is still fresh. Surfaces should be cleaned with a damp cloth, before the adhesive dries.

## CONSUMPTION

### Bonding ceramic tiles

– 1.2 kg/m<sup>2</sup> per mm of thickness

### Bonding panels

- Spreader (round notches): 6-7 kg/m<sup>2</sup>
- Spot-bonding (with a trowel): 4-6 kg/m<sup>2</sup>

## PACKAGING

**Keraflex Maxi S1** is available in 25 kg paper bags.

## STORAGE

**Keraflex Maxi S1** can be stored 12 months in a dry place in its original packaging.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website [www.mapei.com.my](http://www.mapei.com.my)

PRODUCT 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](http://www.mapei.com)

## LEGAL NOTICE

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**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**



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