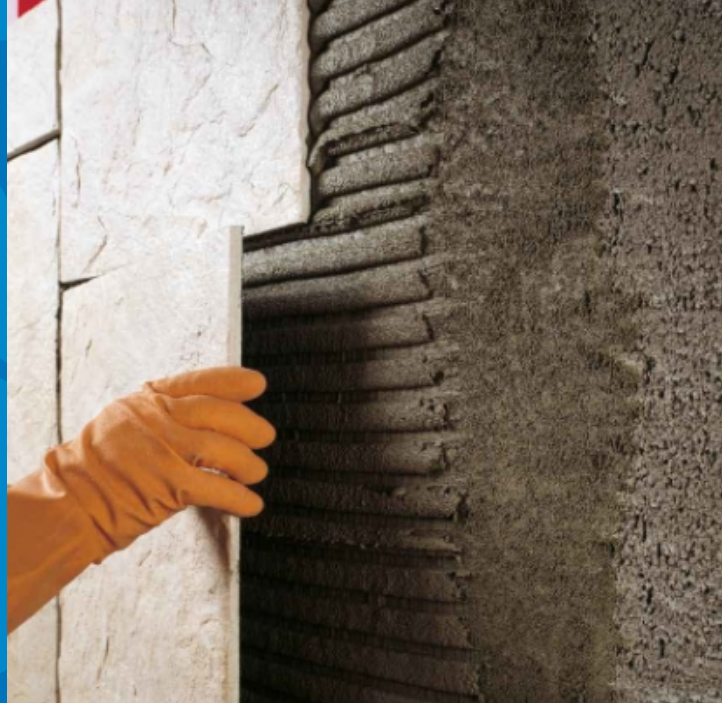
KERAFLEX MAXI S1

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



CLASSIFICATION IN COMPLIANCE WITH ISO 13007-1 AND EN 12004

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

WHERE TO USE

· Interior and exterior bonding of ceramic tiles of every type and size (single and double fired tiles, porcelain tiles, clinker, terracotta, etc.) usable to a thickness up to 15 mm in case of uneven substrates.
· Interior and exterior bonding of stone and agglomerate materials (provided that they are classified as stable and not irreversibly sensitive to moisture).
· Spot bonding of insulating material in interior such as expanded polystyrene, rock and glass wool, Eraclit ® (wood-cement panels), sound-deadening panels, cork, etc.

Some application examples

· Bonding ceramic tiles (double-fired, single-fired, porcelain tiles, clinker etc.) and stone materials (provided that they are not sensitive to moisture) on conventional substrates such as:
– cementitious screeds and underfloor heating and cooling installations;
– cementitious renders or lime and cement-based mortar;
– gypsum board as long as firmly fixed;
– compatible sound insulation membranes.
· Ceramic and stone material tiles on existing flooring (ceramic, marble, etc.).
· Installation of floors subjected to heavy traffic.
· Installation of floor and wall coverings on substrates waterproofed with **Mapelastic**, **Mapelastic Smart**, **Mapelastic AquaDefense**, **Mapelastic Turbo** and **Mapegum WPS**.
· Interior and exterior bonding of tiles or strips (porcelain tiles, clinker, single-fired, terracotta) with highly profiled ribs or lugs.

TECHNICAL CHARACTERISTICS

Keraflex Maxi S1 is a grey or 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 Laboratories. A mortar with the following features is obtained when **Keraflex Maxi S1** is mixed with water:
· Low viscosity, therefore easily workable.
· Highly thixotropic: **Keraflex Maxi S1** can be applied on a vertical surface without sagging or letting even heavy and large tiles slip. Tiles can be installed from the top towards the bottom without using spacer pegs.
· Good capability to the different deformation of the covering from the substrate.
· Perfect adherence to all materials normally used in building.

· Hardens even when thickly applied, without appreciable shrinkage and without decreasing in thickness, until acquiring a considerable resistance.
· Particularly good 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 subject to efflorescence or stains.
· With natural or artificial stone material subject to unstable movement due to moisture.
· On pre-cast concrete or substrates subject to excessive movement.
· When surfaces need to be ready for traffic in a short time.

APPLICATION PROCEDURE

Preparation of the substrate

The substrate must be adequately cured, mechanically sound, free of loose particles, grease, oil, paint, wax and other deleterious material or surface contamination and should be sufficiently dry.
Cementitious substrate must not be subject to shrinkage after tile installation. In mild weather, renders must have cured at least 1 week for each centimetre of thickness and cementitious screeds must have cured at least 28 days, unless they have been made with MAPEI special binders for screeds such as **Mapecem**, **Mapecem Pronto**, **Topcem**, **Topcem Pronto**.
Surfaces that could become too hot due to exposure to sunlight, consider shading or cooling down with potable water.
Gypsum substrate and anhydrite screeds must be perfectly dry (maximum residual moisture 0.5%), sufficiently hard and free of dust. It is absolutely essential that they are treated with **Primer G** or **Eco Prim T Plus**.

Preparation of the mix

While stirring, pour **Keraflex Maxi S1** into a container with approximately 28-30 per 100 parts (by weight) of clean water equal to 7-7.5 L of water per 25 kg of **Keraflex Maxi S1.** Mix, preferably with a low-speed mixer, to obtain a homogeneous, creamy paste and lump-free mix; leave to rest for approximately 5 minutes and re-mix, the paste is then ready to use.
The mix, produced in this way, is workable for approximately 8 hours (at +23°C).

Application of the mix

Keraflex Maxi S1 is applied to the substrate using a notched trowel. Choose a trowel that allows for complete coverage to 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 tiled floors and walls, tile sizes greater than 900 cm^2, floors that must be levelled during tiling installation or subject to heavy loads, or when applying in swimming pools and basins filled with water, spread the adhesive on the back of the tile (back-buttering) in order to ensure 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.

Installation of the tiles

It is not necessary to wet the tiles before installation; only in the case of very dusty backs is washing recommended, by quickly immersing them in clean water. The tiles must be installed in the normal way, placing them firmly to ensure good contact with the adhesive. The open time of **Keraflex Maxi S1** in normal conditions of temperature and humidity, is 30 minutes; unfavorable environmental conditions (strong sunlight, drying wind, high temperature as well as a highly absorbent substrate), could drastically reduce this time to a few minutes.
Therefore one must constantly check that the adhesive has not formed a superficial skin and is still “fresh”; where there is a formation of superficial skin, the adhesive must be reworked with the notched trowel. Wetting the adhesive after it has produced the skin is not recommended because the water forms an anti-adhesive film instead of dissolving it. The “adjustability” of the tiles must be carried out within 60 minutes (at +23°C) after installation. Tiles installed with **Keraflex Maxi S1** must not be subject to running water or rain for at least 24 hours and must be protected from frost and strong sunlight for at least 5-7 days after installation. Swimming pools and basins can be filled after 21 days.

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 levelness of the surfaces and by the weight of the panels.

Cleaning

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.

GROUTING AND SEALING

Wall joints between the ceramic tiles 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.
Grout with the appropriate MAPEI grout (see Technical Data Sheet of grouts for details).

External installation of clinker tiles

Installation of hand made terracotta on an uneven substrate

External installation of relief terrazzo "graniglie" tiles

Installation of external hewn back stones with or without buttering, depending on thickness and size

Installation of external hewn back stones with or without buttering, depending on thickness and size

SET TO LIGHT FOOT TRAFFIC

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

CONSUMPTION

Bonding ceramic tiles
– 1.2 kg/m² per mm of thickness.
Bonding panels
– Applied with a trowel approx. (rounded notch): 6-7 kg/m²
– Spot-bonding (with a trowel): 4-6 kg/m²

PACKAGING

Keraflex Maxi S1 is available in 25 kg bags.

STORAGE

When stored in dry conditions in the original, unopened bags, **Keraflex Maxi S1** has a shelf life of 12 months. If stored at high temperature and or high humidity conditions the shelf life may be reduced.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instruction on the safe use of our products can be found on the latest version of the Safety Data Sheet available on our website www.mapei.ae

TECHNICAL DATA (typical values) **In compliance with:** **– European EN 12004 as C2TES1** **– ISO 13007-1 as C2TES1** **– American ANSI A 118.4** **– Canadian 71 GP 30 M type 2**	
PRODUCT IDENTITY	
Type:	powder
Colour:	grey, white
Bulk density (kg/m³):	1400
Dry solids content (%):	100
EMICODE:	EC1 Plus - very low emission
COMPOSITION AND PROPERTIES OF MIXTURE (at +23°C and 50% R.H.)	
Mixing ratio:	100 parts **Keraflex Maxi S1** with 28-30 parts water by weight
Consistency of mix:	pasty
Density of mix (kg/m³):	1600
pH of mix:	over 12
Application temperature:	from +5°C to +40°C
Pot life:	over 8 hours
Open time (according to EN 1346):	> 30 minutes
Adjustability time:	approx. 60 minutes
Ready for grouting on walls:	after 4-8 hours
Ready for grouting on floors:	after 24 hours
Set to light foot traffic	24 hours
Ready for use:	7 to 14 days depending on actual temperature and RH
FINAL PERFORMANCE	
Tensile adhesion strength in compliance with EN 1348 (N/mm²): **– initial tensile adhesion strength (after 28 days):** **– tensile adhesion strength after heat aging:** **– tensile adhesion strength after water immersion:** **– tensile adhesion strength after freeze/thaw cycles:**	 2.0 2.0 1.1 1.3
Resistance to alkalis:	excellent
Resistance to oils:	excellent (poor to vegetable oil)
Resistance to solvents:	excellent
Temperature when in use:	from -30°C to +90°C
Deformability according to ISO 13007-1 and EN 12004:	S1 - deformable

VOC:	0 g/l

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.com

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into other project-related documents, 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 ALTERATIONS TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

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