

KERASTILE G3 S1

High-performance, easy to apply, deformable cementitious adhesive with no vertical slip and extended open time, with high wetting capacity and very low emission of volatile organic compounds. It is particularly recommended for bonding large-sized porcelain tiles over large areas of flooring



CLASSIFICATION ACCORDING TO EN 12004

Kerastile G3 S1 is a C2TES1 class cementitious (C), improved (2), thixotropic (T), extended open time (E), deformable (S1) adhesive.

The conformity of **Kerastile G3 S1** is certified by the **TT n. 1372/CPR/3034/RP** and **n. 16/12733-1531** certificates issued by the **TECNO PIEMONTE (Italy)**.

WHERE TO USE

Bonding all types and sizes of ceramic tile (porcelain, single-fired, terracotta, double-fired, klinker, etc.), stable stone material not subject to staining and all types of mosaic on internal and external surfaces on floors and walls. Specifically suited for large areas of flooring and large-sized tiles, particularly floors in commercial, industrial and civil environments. Suitable for bonding on façades. May be applied in layers up to 10 mm thick.

Some application examples

- Bonding ceramic tiles (porcelain, single-fired, terracotta, double-fired, klinker, etc.), stone material stable in damp environments, and mosaic on the following types of substrate:
 - well cured, dry cementitious screeds and screeds made from special binders (such as **Topcem** and **Mapecem**);
 - heated floors;
 - sound, well cured concrete floors;
 - cementitious and lime/cement render on internal and external facades;
 - internal cellular cement block walls treated with **Primer G**;
 - dry gypsum and anhydrite treated with **Primer G** or **Eco Prim T**;
 - plasterboard fastened to a rigid support;
 - waterproofing membranes made from
 - **Mapegum WPS** or **Mapelast** range of products.
 - Uncoupling, anti-fracture waterproofing membrane such as **Mapeguard UM 35**.

- Spot-bonding insulating materials such as foam polyurethane, Rockwool, glass fibre wool, polystyrene and cork soundproofing panels, etc in internal walls.
- Overlaying old floors with ceramic tiles, terrazzo and stone material.
- Bonding tiles in swimming pools and tanks.
- Bonding on façades.

TECHNICAL CHARACTERISTICS

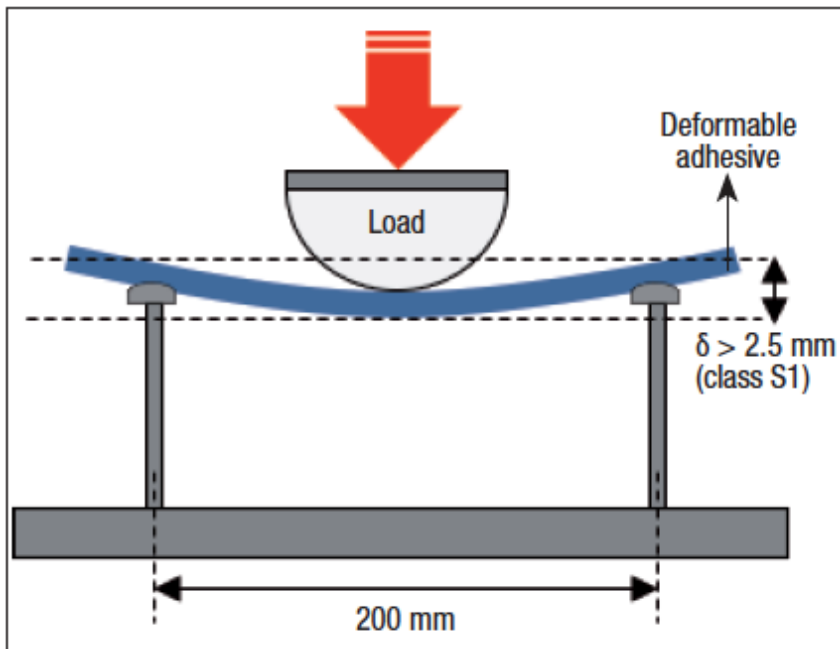
Kerastile G3 S1 is a white-coloured powder made from cement, selected graded sand, a high rate of synthetic resin and special additives according to a formula developed in MAPEI research laboratories.

Kerastile G3 S1 has very low emission of volatile organic compounds (VOC) into the area where it is applied and safeguards the quality of the air and health of floor tilers. It is certified as EC1 PLUS.

The use of **Kerastile G3 S1** contributes to the earning of important LEED credits.

When mixed with water it forms mortar with the following characteristics:

- good workability;
- easy to apply;
- extended open and adjustment times to make laying operations easier.
- 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 EN 12004;
- perfect adhesion to all materials normally used in the building industry;
- hardens with negligible shrinkage;



RECOMMENDATIONS

Do not use **Kerastile G3 S1**:

- on concrete not sufficiently cured;
- on precast concrete or concrete subject to large movements;
- on wood or wooden conglomerates;
- on metal, linoleum, rubber or PVC surfaces;
- with marble slabs, natural stone or composite slabs subject to staining, efflorescence or movements caused by damp;
- on floors and dressing materials subject to large movements or vibrations;
- for bonding materials that require a layer of adhesive more than 10 mm thick;
- when floors need to be put back into service quickly.

APPLICATION PROCEDURE

Substrate preparation

Substrates must meet the requirements of UNI 11493-1 and be cured, strong and free of crumbling areas, grease, oil, varnish or wax.

Kerastile G3 S1 may take longer to set on damp substrates.

Cementitious substrates must not shrink after laying tiles. Therefore, in good weather, render must be cured for at least one week per cm of thickness, while cementitious screeds must be cured for at least 28 days, unless they are made from MAPEI special binders and ready-mixed screed mortar, 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 (maximum residual humidity 0.5%, 0.3% in case of heated screeds), strong and free of dust. They must also be treated with **Primer G** or **Eco Prim T** before applying **Keraflex Extra S1**.

In damp environments, use **Mapegum WPS** or products from the Mapelastic range to waterproof the substrate.

Preparation of the mix

Blend **Kerastile G3 S1** with clean water using an electric mixer to obtain a smooth, lump-free mix. Let the mix stand for around 5 minutes then blend again.

The amount of water varies from 29-31 parts per 100 parts in weight, equal to 7.25-7.75 litres of water every 25 kg of **Kerastile G3 S1**.

When blended as described above, the mix has a pot life of around 8 hours.

Spreading the mix

Apply **Kerastile G3 S1** on the substrate with a notched trowel. Use a trowel that allows complete wetting of the back of the tile.

To guarantee a good bond, apply a thin layer of **Kerastile G3 S1** on the substrate using the smooth side of the spreader and then immediately apply a second layer of **Kerastile G3 S1** to form the thickness required using a notched trowel suitable for the type and size of tiles to be bonded.

In case of highly absorbent substrates and high temperatures, it is recommended to dampen the substrate before spreading **Kerastile G3 S1**, to help extending the adhesive's open time.

In case of external installation of large ceramic tiles with sides over 30 or 60 cm, heated floors, floors to be polished after laying or subject to heavy loads, application in water tubs or swimming pools, apply the back-buttering technique by spreading the adhesive on the back of the tiles to ensure complete wetting, according to UNI 11493-1 guidelines.

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 bonding tiles, apply firm pressure to guarantee good wetting.

The open time for **Kerastile G3 S1** is around 30 minutes in normal weather conditions. When laying conditions are not ideal (direct sunlight, dry wind, high temperatures, etc.), or if the substrate is particularly absorbent, this time may reduce to just a few minutes. Therefore, check often to make sure skin does not form on the surface of the adhesive and that it is still fresh. If skin forms, spread the adhesive again with the notched spreader.

Do not wet the surface of the adhesive if a skin forms. Water does not dissolve the skin and impedes correct adhesion. Final adjustment of the tiles must be carried out within 60 minutes of bonding.

Tiles and stone bonded with **Kerastile G3 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.

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 suitable MAPEI sealant.

SET TO FOOT TIMES

Floors may be stepped on after around 24 hours.

WAITING TIME BEFORE PUTTING INTO SERVICE

Surfaces may be put into service after around 14 days. Water tubs and swimming pools can be filled after 21 days.

CLEANING

Clean tools and containers with water while **Kerastile G3 S1** is still fresh. Clean the surface of tiles with a damp cloth before the adhesive hardens.

CONSUMPTION

Bonding ceramics

- Mosaic and small tiles in general (No. 4 spreader): 2 kg/m²
- Normal size tiles (No. 5 spreader): 2.5-3 kg/m²
- Large tiles, external floors (No. 6 spreader): 5 kg/m².

PACKAGING

Kerastile G3 S1 is available in 25 kg paper bags.

STORAGE

Kerastile G3 S1 may be stored for 12 months in its original packaging in a dry place.

TECHNICAL DATA (typical values) In compliance with: ▪ European EN 12004 as C2TES1 ▪ ISO 13007-1 as C2TES1	
PRODUCT IDENTITY	
Consistency:	powder
Colour:	white
Bulk density (kg/m ³):	1,300
Dry solids content (%):	100
EMICODE:	EC1 Plus - very low emission
APPLICATION DATA (at +23°C and 50% R.H.)	
Mixing ratio:	100 parts of Kerastile G3 S1 with 29-31 parts of water by weight for Kerastile G3 S1
Consistency of mix:	creamy paste
Density of the mix (kg/m ³):	1,450
pH of mix:	13
Pot life of mix:	over 8 hours
Application temperature:	from +5°C to +40°C

Open time:	>30 minutes
Adjustment time:	45 minutes
Ready for grouting on walls:	after 4-8 hours depending on absorbency
Ready for grouting on floors:	after 24 hours
Set to light foot traffic:	24 hours
Ready for use:	14 days
FINAL PERFORMANCE	
Bond strength according to (N/mm ²): – initial bonding after 28 days: – bonding after heat exposure: – bonding after immersion in water: – bonding after freeze/thaw cycles:	2,3 -2,3 -1,3 -1,7
Resistance to alkalis:	excellent
Resistance to oils:	excellent (poor for vegetable oils)
Resistance to solvents:	excellent
Temperature when in use:	from –30°C to +90°C
Deformability according to EN12004:	S1-deformable

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
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

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