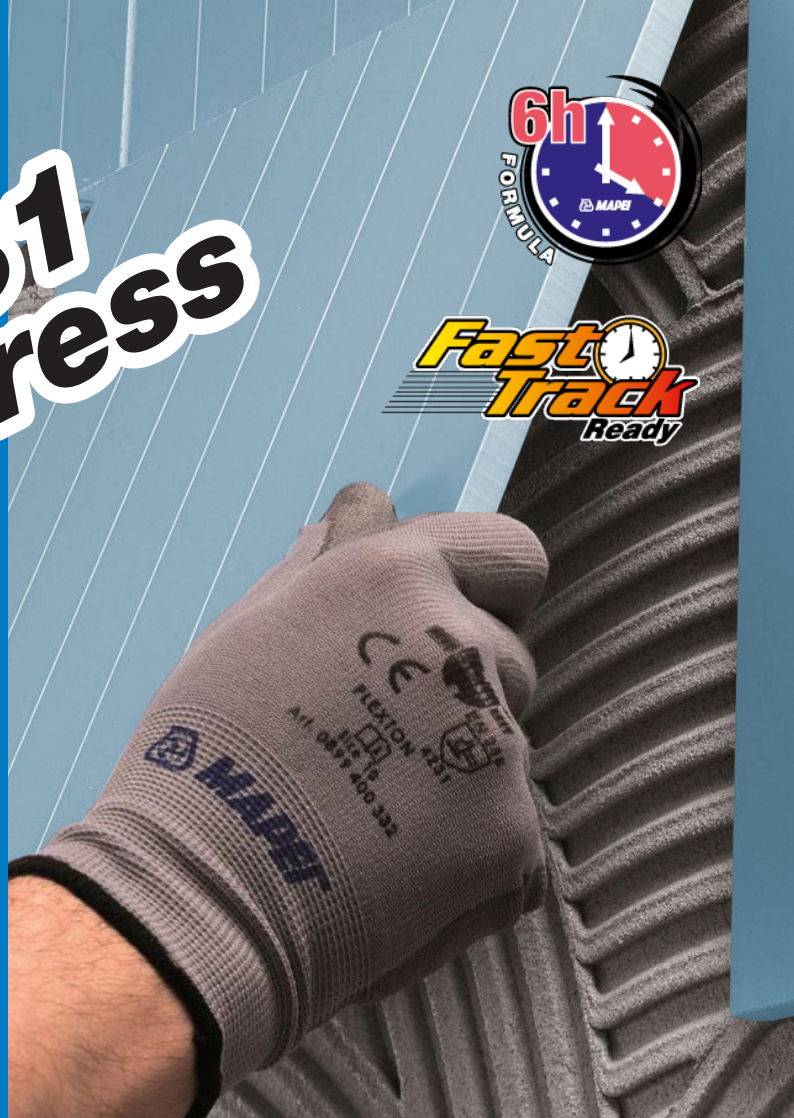




# Keraflex S1 Express

**High performance, rapid setting, deformable S1 cementitious adhesive with extended open time for the installation of ceramic, porcelain and stone tiles and mosaics**



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

**Keraflex S1 Express** is a cementitious (C), improved (2) adhesive with fast-setting abilities (F), extended open time (E) and deformability (S1) classified as C2FES1.

## **WHERE TO USE**

Bonding to cement-based and calcium sulphate based screeds, concrete, plywood overlay, existing unglazed ceramic floor tiles, cement-based renders, gypsum plaster, plasterboard, tilebacker boards.

- For interior and exterior use.
- For the installation of ceramic and porcelain tiles and mosaics. For natural stone not sensitive to moisture.
- For the installation of insulating materials such as expanded and extruded polystyrene panels, gypsum boards, glass and rockwool, Eraclit®, aerated concrete blocks, sound deadening panels.

## **Some application examples**

- Renovation in heavily trafficked areas and where surfaces need to be quickly back in service, such as public buildings, motorway services, pedestrian walkways, supermarkets, showrooms, airports etc.
- Rapid installation or renovation in swimming pools, industrial plants (breweries, wine cellars, dairies etc.), refrigeration units.
- Rapid installation in bathrooms, showers, kitchens, conservatories, balconies and terraces.

- The installation of tiled finishes to underfloor and undertile heating systems.
- The installation of non-absorbent floor tiles over existing floors, where a standard setting adhesive would be too slow.
- The installation of MAPEI **Mapetex** anti-fracture membrane.

## **TECHNICAL CHARACTERISTICS**

**Keraflex S1 Express** is a grey or white powder composed of a blend of special cements, selectively graded aggregates, synthetic resins and accelerators, which develop high bond strength 4-6 hours after mixing. These properties allow floors and walls tiled using **Keraflex S1 Express** to be grouted after only 4-6 hours. Floors can also be subjected to light foot traffic after 6 hours and full service conditions after 24 hours.

Where floors are to be subjected to heavy duty use, such as cherry pickers, the floor tiling should have been allowed to cure for a minimum of 7 days.

## **RECOMMENDATIONS**

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

- on metals (except steel), rubber, cork, PVC sheet and linoleum;
- for bonding expanded polystyrene insulation panels with a protective film/vapour barrier.



# Keraflex S1 Express

## APPLICATION PROCEDURE

### Preparing the substrate

Substrates must be dry, flat, mechanically strong, sound, free from loose areas, grease, oil, paint, wax, old flooring adhesive and bitumen residues and any other contamination (e.g. plaster droppings), which may affect the adhesion. Damp substrates may lengthen **Keraflex S1 Express**'s setting time.

Cement floors should be dried at least for 28 days, unless they are made of special fast-setting binders like: **Mapecem, Mapecem Pronto, Topcem, Topcem Pronto**. Surfaces exposed to strong sunlight should be moistened with water. Gypsum and calcium sulfate substrates should be dry (moisture content, 0.5%, maximum), sufficiently strong and dust free. They should be treated with emulsion **Primer G** or **Eco Prim T**.

### Preparing the mix

A 20 kg bag of **Keraflex S1 Express** grey should be mixed with about 4.2 litres of water. Pour clean water (or liquid) into a clean mixing bucket. Add **Keraflex S1 Express** powder and mechanically stir until a homogenous, lumpfree paste is achieved. Allow the mix to stand for 5 minutes then briefly stir again. Use the mix within 60 minutes of preparation.

### Applying the mix

Apply the prepared **Keraflex S1 Express** to the substrate with a notched trowel to a maximum of 10 mm thick. To achieve good adhesion to the substrate, first apply a skim coat of adhesive over the substrate using the flat edge of the trowel followed by combing through with the notched edge of the trowel to the required thickness.

Ensure that a minimum coverage of 65-70% to the back of the tile is achieved in dry wall areas with 100%, as far as possible, in wet walls areas, on floors and in exteriors (walls and floors).

Ensure that a trowel with a notch size and profile appropriate to the size of tile is used.

For demanding applications such as exterior tiling subject to freezing, swimming pools or water feature installations, heavy duty areas, floor tiling to be ground in situ, when installing tiles with deep recesses or lugs on the rear and for fixing large format tiles (> 300 x 300 mm), the adhesive should also be applied to the rear of the tile (back buttering).

On highly absorbent substrates it is recommended to prime with e.g. **Primer G** and **Eco Prim T** before commencing tiling.

### Laying the tiles

Do not wet the tiles before installation; if, however, the backs are very dusty, they

should be dipped in clean water. Allow to dry before fixing.

**Keraflex S1 Express**'s open time in normal temperature and humidity is about 15-20 minutes; unfavourable weather conditions (strong sun, drying wind, high temperature), or a highly absorbent substrate may shorten this open time, sometimes quite drastically, to just a few minutes.

Constantly check to see whether the adhesive has formed a surface skin. Should a surface skin have formed, the adhesive should be removed and fresh material applied.

It is not recommended to wet the adhesive when it has formed a skin because a nonadhesive film will be formed.

Tiling installed with **Keraflex S1 Express** must not be subjected to washout or rain for at least 6 hours and must be protected from frost and strong sun for at least 24 hours after installation.

## GROUTING AND SEALING

Joints between the tiles can be grouted after a minimum of 6 hours with a suitable MAPEI cementitious or epoxy resin grout, available in a wide range of colours.

Movement joints must be sealed with an appropriate elastic sealant such as **Mapesil AC, Mapesil LM** or **Mapeflex PU45 FT**.

## Spot-bonding insulating materials

Spot bonding to sound-deadening or insulating panels should be applied using a float or trowel, the trowel type and size will be determined by the flatness of the surface and the weight of the panels. In these cases, check the open time and bear in mind that a few spots of adhesive on heavy panels may require temporary shoring which should only be removed once the **Keraflex S1 Express** has begun to set.

## SET TO LIGHT FOOT TRAFFIC

Floors are able to take light foot traffic after 6 hours. Lower temperatures may extend the setting time.

## READY FOR USE

Tiled finishes are ready for use after a minimum of 24 hours. Where floors are to be subjected to heavy loads such as cherry pickers, then the adhesive should be allowed to cure for a minimum of 7 days. Swimming pools, basins and water feature can be filled after a minimum of 3 days.

## Cleaning

Tools should be cleaned with water before the adhesive sets. Floors and walls can be cleaned with a damp cloth. Water should be used only in moderate quantities and after a few hours.

## TECHNICAL DATA (typical values)

In compliance with:

- EN 12004 as C2FES1  
- ISO 13007-1 as C2FES1

### PROPERTIES OF THE PRODUCT

Consistency:	powder
Colour:	grey
Bulk density (kg/m <sup>3</sup> ):	1500
Solid contents (%):	100
Ecode	EC1 R Plus - Very low emission

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

Mixing ratio:	4.2 litres of water per 20kg bag of <b>Keraflex S1 Express</b> .
Consistency of the mix:	creamy paste
Density of the mix (kg/m <sup>3</sup> ):	1500
pH reaction of the mix:	11
Processability of the mix:	30 minutes
Application temperature:	from +5°C to +30°C
Open drying time (according to EN 1346):	15-20 minutes
Grouting on walls:	after 4 hours
Grouting on floors:	after 6 hours
Set to light foot traffic:	after 6 hours
Full load operation:	24 hours (after 3 days for water features and swimming pools)

### FINAL PERFORMANCES

Adhesion (according to EN 1348) (N/mm <sup>2</sup> ):	
- initial (after 28 days at temp. +23°C, H.R. 50%):	2.0
- after after heat ageing:	2.8
- after water immersion:	1.1
- after freeze/thaw cycles:	1.5
Resistance to acids:	fair
Resistance to alkalis:	excellent
Resistance to oils:	excellent
Resistance to solvents:	excellent
Resistance to temperature:	from -30°C to +90°C
Deformability according to EN 12004:	S1 - Deformable

# Keraflex S1 Express

## CONSUMPTION

Mosaic and small tiles: approx. 2 kg/m<sup>2</sup>.

Standard size tiles: approx. 3-4 kg/m<sup>2</sup>.

Large tiles, floors and exteriors: approx. 4-6 kg/m<sup>2</sup>.

**Notes:** The above consumption figures represent average values and may vary dependent on the flatness of the substrate and the size of the notched trowel used.

## PACKAGING

**Keraflex S1 Express** grey is available in 20 kg bags.

## STORAGE

12 months when stored off the ground in the original unopened packaging protected from high humidity. Prolonged storage at extremes of temperature (low or high) and exposure to damp or humid conditions may extend the setting time of **Keraflex S1 Express**.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Keraflex S1 Express** is an irritant which contains cement that when in contact with sweat or other bodily fluids causes an irritant alkaline reaction and allergic reactions to those predisposed. During use wear protective gloves and goggles, and take the usual precautions for handling chemicals.

If the product comes in contact with the eyes or skin, wash immediately with plenty of water and seek medical attention.

For further and complete information about the safe use of our product please refer to the latest version of our Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

## WARNING

*While the indications and guidelines contained in this data sheet correspond to the company's knowledge and wide experience, they must be considered, under all circumstances, merely as an indication and subject to confirmation only after long-term, practical applications. Therefore, anybody who undertakes to use this product, must ensure beforehand that it is suitable for the intended application and, in all cases, the user is to be held responsible for any consequences deriving from its use.*

Please refer to the current version of the **Technical Data Sheet**, available from our website [www.mapei.com](http://www.mapei.com)

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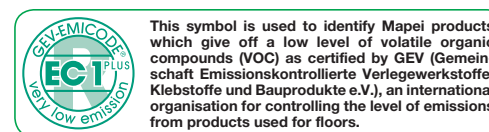
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**All relevant references for the product are available upon request and from [www.mapei.com](http://www.mapei.com)**