



# Keraflex

**High-performance  
cementitious adhesive  
with no vertical slip  
and extended open  
time for ceramic tiles  
and stone material**

#### **CLASSIFICATION IN COMPLIANCE WITH EN 12004**

Keraflex is an improved (2) slip resistant (T) cementitious adhesive (C) with extended open time (E) classified as C2TE.

Conformity of *Keraflex* is declared in **ITT** certificates n° **25040476/Gi (TUM)** and **ITT n° 25080239/Gi (TUM)** issued by the Technische Universität München laboratory (Germany) and in **ITT** certificates n° **1220.12/10/R03 NPU; 1220.14/10/R03 NPU; 1220.11/10/R03 NPU** and **1220.13/10/R03 NPU** issued by the Istitute ITB Katowice (Poland).

#### **WHERE TO USE**

Interior and exterior bonding of ceramic tiles (single-fired, double-fired, porcelain tiles, terracotta, klinker, etc.) stone materials and mosaics of every type on floors, walls and ceilings. Also suitable for spot bonding of insulating materials such as expanded polystyrene, rock and glass wool, Eraclit® (wood-cement panels), sound-deadening/reduction panels, etc.

#### **Some application examples**

- Bonding ceramic tiles (double fired, single fired, porcelain, clay tiles, klinker, etc.), stone materials and mosaics on the following substrates:
  - cement or mortar wall renders;
  - interior aerated concrete block walls;
  - gypsum or anhydrite after having first applied **Primer G**;
  - gypsum board;
  - underfloor heated installations;
  - cement screeds, as long as they are sufficiently cured and dry;
  - interior painted walls, as long as the paint is firmly anchored;



# Keraflex



Installation of pre-glossed marble on floors



Installation of single-fired tile on expanded foam concrete block walls



Single-fired tile on terrazzo tile of an external wall

– waterproofed membranes in **Mapelastic** or **Mapegum WPS**.

- Tile on tile of existing flooring.
- Bonding small sized tiles in swimming pools and basins.
- Bonding floors subject to heavy stress.

## TECHNICAL CHARACTERISTICS

**Keraflex** is a grey or white powder composed of cement and graded aggregates. It contains a high quantity of synthetic resins and special admixtures created according to a formula developed in MAPEI's research laboratories. A mortar with the following features is obtained when mixed with water:

- easily workable;
- highly thixotropic: **Keraflex** can be applied on a vertical surface without slumping or letting the tiles slip, even for heavy tiles. Tiles can be installed from the top towards the bottom without using spacer pegs;
- perfect adherence to all materials normally used in building;
- hardens without appreciable shrinkage;
- extended open time.

## RECOMMENDATIONS

Do not use **Keraflex**:

- on concrete subject to high shrinkage;
- on walls and floors subject to strong movement or vibration (wood, fibre-cement, etc.);
- on metal surfaces.

## APPLICATION PROCEDURE

### Preparing the substrate

The substrates must be flat, mechanically resistant, free of loose parts, grease, oils, paints, wax, etc. Damp substrates can slow down the setting of **Keraflex**.

Cement substrates should not be subject to shrinkage after the installation of the ceramic tiles, therefore, during spring and summer, renders must cure at least one week for each cm of thickness and cement 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 which have become heated from exposure to sunlight.

Gypsum substrates and anhydrite screeds must be perfectly dry (max. residual moisture 0.5%), sufficiently hard and free from dust. It is absolutely essential that they be treated with **Primer G** or **Mapeprim SP**, while areas subject to extreme dampness must be primed with **Primer S**.

## Preparing the mix

Mix **Keraflex** with clean water until a smooth, lump-free paste is obtained. Leave to rest approximately 5 minutes and re-stir.

Use 32-33 parts water for every 100 parts by weight of **Keraflex**, which is equal to 8-8.25 litres of water for every 25 kg of powder. Mixed this way, **Keraflex** has a pot life of approximately 8 hours.

## Spreading the mix

**Keraflex** is applied to the substrate using a notched trowel. Choose a trowel that allows for complete coverage of the tile back. To achieve a good adhesion, spread an initial thin layer of **Keraflex** on the substrate using the flat side of the trowel. Immediately after, apply the desired thickness of **Keraflex** using a suitable notched trowel, depending on the type and size of the tiles (see "Coverage"). For external ceramic tile floors and walls, sizes greater than 900 cm<sup>2</sup>, floors subject to heavy loads, when applying in swimming pools and basins filled with water, spread also the adhesive on the back of the tiles (back-buttering) in order to ensure a complete coverage.

## 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 good coverage of the adhesive. In normal temperatures and humidity conditions, the open time of **Keraflex** is approximately 30 minutes. Unfavourable weather conditions (strong sun, wind, high temperatures, etc.) or a highly absorbent substrate can reduce the open time, even to just a few minutes.

It is therefore necessary that careful checks 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 of installation.

Tiling installed with **Keraflex** 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.

## Spot-bonding insulating materials

For spot-bonding sound-deadening or insulating panels, apply **Keraflex** with a trowel or a float.

## 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.

## TECHNICAL DATA (typical values)

In compliance with:

- European EN 12004 such as C2TE
- ISO 13007-1 such as C2TE

### PRODUCT IDENTITY

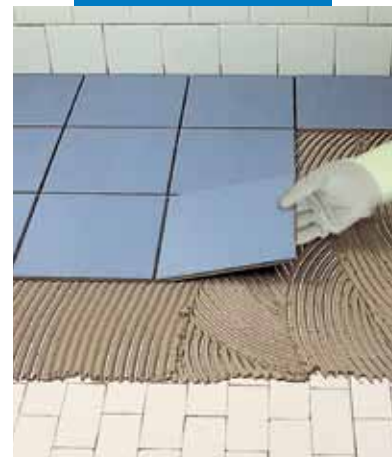
Consistency:	powder
Colour:	white or grey
Bulk density (kg/m <sup>3</sup> ):	1,300
Dry solids content (%):	100
EMICODE:	EC1 R Plus - very low emission

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

Mixing ratio:	100 parts <b>Keraflex</b> with 32-33 parts water by weight
Consistency of the mix:	pasty
Density of the mix (kg/m <sup>3</sup> ):	1,500
pH of mix:	13
Pot life:	over 8 hours
Application temperature range:	from +5°C to +40°C
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:	14 days

### FINAL PERFORMANCES

Bonding strength according to EN 1348 (N/mm <sup>2</sup> ):	
- initial bonding after 28 days:	1.8
- bonding after heat exposure:	1.7
- bonding after immersion in water:	1.2
- bonding after freeze/thaw cycles:	1.4
Resistance to alkalis:	excellent
Resistance to oils:	excellent (poor to vegetable oils)
Resistance to solvents:	excellent
Temperature when in use:	from -30°C to +90°C



Tile on tile with  
Keraflex grey

# Keraflex

## READY FOR USE

Surfaces are ready for use after approx. 14 days.

Swimming pools and basins can be filled after 21 days.

## Cleaning

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

## COVERAGE

### Bonding ceramic tiles

- Mosaics and small sizes in general (trowel n. 4): 2 kg/m<sup>2</sup>
- Normal sizes (trowel n. 5): 2.5-3 kg/m<sup>2</sup>
- Large sizes, exterior floors (trowel n. 6): 5 kg/m<sup>2</sup>

### Spot-bonding insulating material

- Foam, etc. approx. 0.5-0.8 kg/m<sup>2</sup>
- Gypsum board panels, cellular concrete: approx. 1.5 kg/m<sup>2</sup>

## PACKAGING

**Keraflex** white and grey are available in 25 kg bags and in 4x5 kg boxes.

## STORAGE

**Keraflex** can be stored 12 months in a normal environment in original packaging. The product complies with the conditions of Annex XVII to Regulation (EC) N° 1907/2006 (REACH), item 47.

## SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

**Keraflex** is an irritant, it contains cement that when in contact with sweat or other body fluids causes an irritant alkaline reaction and allergic reactions to those predisposed. It can cause damage to eyes. In case of

contact with eyes or skin wash immediately with plenty of water and seek medical attention. It is recommended to use protective gloves and goggles.

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

*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)



This symbol is used to identify Mapei products which give off a low level of volatile organic compounds (VOC) as certified by GEV (Gesellschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an international organisation for controlling the level of emissions from products used for floors.



**Our Commitment To The Environment**  
MAPEI products assist Project Designers and Contractors create innovative LEED (The Leadership in Energy and Environmental Design) certified projects, in compliance with the U.S. Green Building Council.

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

## VOLATILE ORGANIC COMPOUND (VOC) LEVEL

Type of Regulated Adhesives under the Air Pollution Control (Volatile Organic Compounds) Regulation of Hong Kong: [Ceramic tile adhesives]

VOC content (ready to use) not exceeding 10 g/litre



An example of an installation of porcelain tiles - Zanchetta Shopping Centre - Treviso (Italy)



Fixing polystyrene foam slabs with Keraflex white



BUILDING THE FUTURE