MAPEI

Keraflex

CE
EN 12004

High performance high grab polymer modified cementitious adhesive with no vertical slip and extended open time for ceramic tiles and natural 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** certificate **N° 25040476/Gi (TUM)** and **no. 25080239/Gi (TUM)** issued by the Technische Universität München laboratory (Germany).*

WHERE TO USE

Interior and exterior bonding of ceramic tiles, porcelain, natural stone materials (not sensitive to moisture) and mosaics on floors and walls.
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, natural stone and mosaics on the following substrates:
  – cement rendered walls;
  – interior aerated concrete block walls;
  – gypsum or anhydrite after having first applied **Primer G** or **Eco Prim T**;
  – underfloor heating installations;
  – cement screeds;
  – interior painted walls, as long as the paint is firmly anchored and resistant to alkalis;
  – waterproof membranes of **Mapelastic**, **Mapegum WPS** or **Mapelastic AquaDefense**.

- Tile on tile of existing unglazed flooring with tiles up to 300x300 mm.

Keraflex

Installation of polished marble on floors

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

Single-fired tile on terrazzo tile of an external wall

- Bonding small format tiles in swimming pools and water features.
- Bonding tiles to floors subject to heavy loading.

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 additives.
A mortar with the following features is obtained when mixed with water:

- Easily workable.
- Highly thixotropic; **Keraflex** can be applied on a vertical surfaces without slump or tile slip, even with heavy tiles.
- Perfect adhesion to all materials normally used in building.
- Hardens with minimal controlled shrinkage.
- Extended open time.
- Water and frost resistant.
- Excellent bond strength.

RECOMMENDATIONS

Do not use **Keraflex:**

- On concrete subject to shrinkage.
- On metal surfaces.
- For installations that require an adhesive thickness greater than 5 mm.

APPLICATION PROCEDURE

Preparing the substrate

The substrate must be flat, free of contamination, loose particles, grease, oils, paints, wax, etc. Damp substrates can slow down the setting of **Keraflex**.

Cement substrates should not continue to shrink after the installation of the ceramic tiles. Renders must cure at least 2 weeks and cement screeds must have an overall cure time of at least 3 weeks, unless they are produced with special binders such as **Mapecem**, **Mapecem Pronto**, **Topcem** or **Topcem Pronto**.

Dampen with water to cool surfaces which have become heated from exposure to sunlight.

Gypsum plaster and anhydrite screeds must be perfectly dry (max. residual moisture 0.5%), sufficiently hard and free from laitance. Mechanically abrade anhydrite screeds to remove all laitance, vacuum and prime. It is essential that they be treated with **Primer G** or **Eco Prim T** (diluted 1:2 with water).

Heated screeds must be commissioned in accordance with recognised technical regulations and the guidelines given in BS 5385 parts 4 and 5.

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 25-27 parts water for every 100 parts by weight of **Keraflex**, which is equal to approx. 5.0-5.4 litres of water for every 20 kg of powder. Mixed this way, **Keraflex** has a pot life of approximately 8 hours.

Applying the mix

Keraflex is applied to the substrate using a notched trowel. Choose a trowel that gives the correct coverage to the tile backs, depending on the expected service conditions.

To achieve good adhesion, spread an initial thin layer of **Keraflex** on the substrate using the flat side of the trowel. Immediately, apply **Keraflex** using a suitable notched trowel, depending on the type and size of the tiles (see “Consumption”).

For external ceramic tiling, tiles greater than 300x300 mm, floors subject to heavy loads, when applying in swimming pools and water features, spread the adhesive on the back of the tile (back-buttering) in order to ensure complete coverage.

Installing the tiles

Do not wet the tiles before installing them. Only with very dusty backs is it recommended to dip the tiles in clean water. Allow to dry before fixing.

Tiles should be installed with firm pressure to ensure good coverage with the adhesive.

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

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

It is therefore necessary that careful checks are made to ensure that a skin does not form on the surface of the spread adhesive.

It is not recommended to wet the adhesive with water once a skin has formed because, 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 8 hours and floor joints can be grouted after 24 hours with the relevant MAPEI cementitious or epoxy grouts, available in up to 27 different colours.

TECHNICAL DATA (typical values)

In compliance with:	– European EN 12004 and ISO 13007-1 such as C2TE
PRODUCT IDENTITY	
Type:	powder
Colour:	white or grey
Bulk density (kg/m^3):	1,300
Dry solids content (%):	100
EMICODE:	EC1 R Plus - very low emission
COMPOSITION AND PROPERTIES OF THE MIXTURE (at +23°C and 50% R.H.)	
Mixing ratio:	100 parts **Keraflex** with 25-27 parts water by weight
Consistency of mix:	creamy paste
Density of the mix (kg/m^3):	1,500
pH of mix:	13
Pot life:	over 8 hours
Application temperature range:	from +5°C to +40°C
Open time (acc. EN 1346):	> 30 minutes
Adjustability time:	approx. 60 minutes
Ready for grouting on walls:	after 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^2): **– initial bonding after 28 days:** **– bonding after heat exposure:** **– bonding after immersion in water:** **– bonding after freeze/thaw cycles:**	 1.8 1.7 1.2 1.4
Resistance to alkali:	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

An example of an istallation of glazed ceramic pool tiles. Leisure centre

Laying polystyrene foam slabs with Keraflex white

Expansion joints must be sealed with the relevant MAPEI sealants.

Mapesil AC silicone sealant is available in matching 26 colours. Use **Mapesil LM** for natural stone.

LIGHT FOOT TRAFFIC
Floors are able to take light foot traffic after approx. 24 hours.

READY FOR USE
Surfaces are ready for use after approx. 14 days.

Swimming pools and water features can be filled after 21 days.

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

CONSUMPTION
Bonding ceramic tiles:

– Mosaics and small sizes in general:	2 kg/m²
– Normal sizes:	2.5-3 kg/m²
– Large sizes, exterior floors:	5 kg/m²

PACKAGING
Keraflex white and grey is available in 20 kg paper bags, 5 kg alupak bags.

STORAGE
Keraflex can be stored 12 months in a normal environment in original packaging. 24 months - 5 kg AluPak. Protect from humidity.
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 irritant, contains cement which, in contact with perspiration or other body fluids, produces an irritating alkaline reaction and may cause allergic reactions to those predisposed. May causes damage to eyes. Wear protective gloves and goggles.
For further and complete information about the safe use of our product please refer to our latest version of the Material Safety Data Sheet.

PRODUCT FOR PROFESSIONAL USE.

N.B.
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 the end users 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.
End users 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

GEV-EMICODE EC 1 PLUS very low emission

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

GREEN INNOVATION

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

106-2-2013

MAPEI®
BUILDING THE FUTURE