SELECTION CHART OF ADHESIVES FOR CERAMIC TILES AND STONE MATERIAL
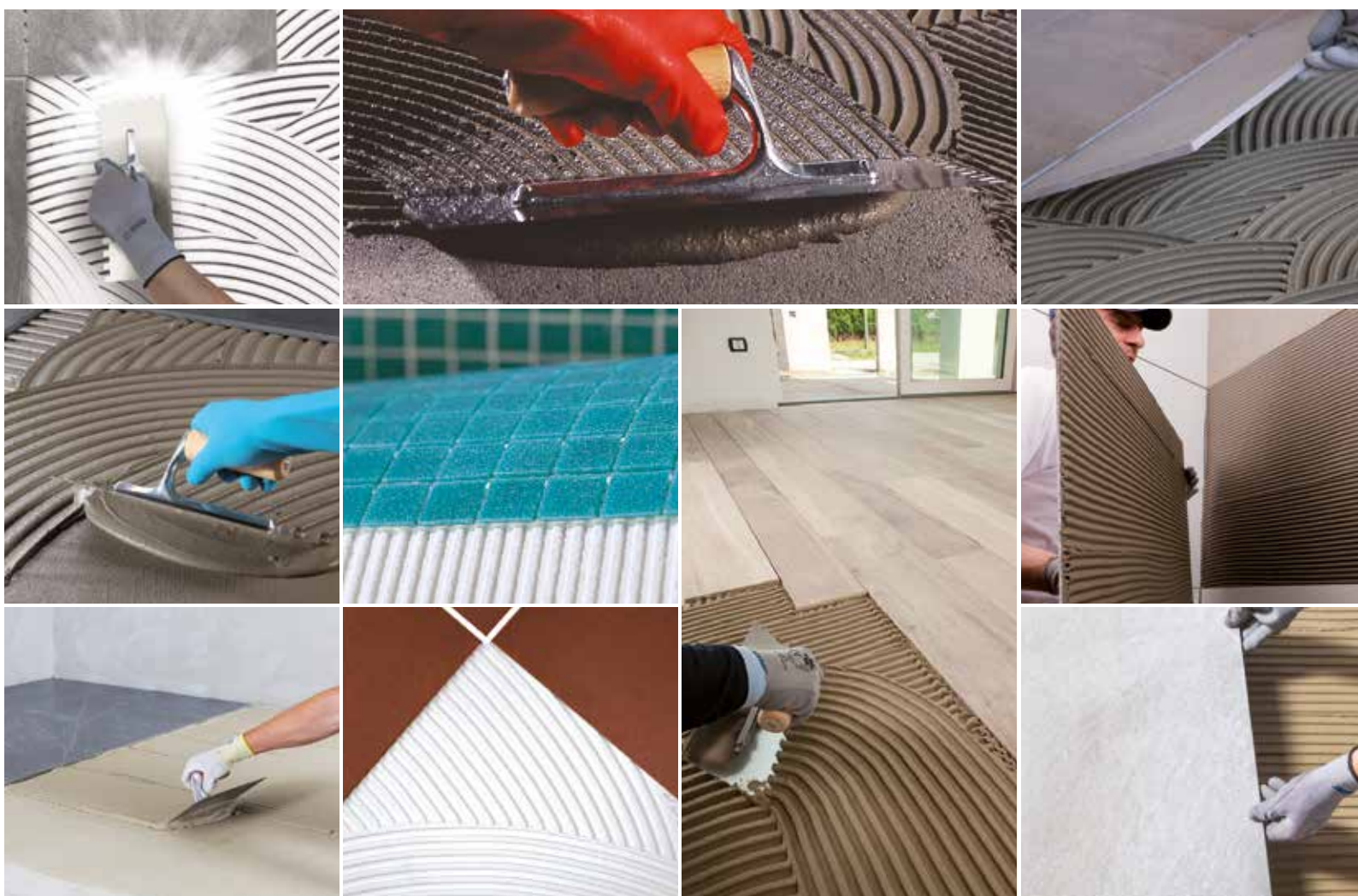
CERAMIC TILES AND STONE MATERIAL LINE

Ceramic tiles, natural stone and recomposed materials are generally used for floors and coatings in residential, commercial and industrial constructions and in airports, swimming pools, etc.

In recent years, the development of new technology for the production of ceramic tiles has led to new, thinner and larger sized tiles being available on the market, which are used to create almost continuous surfaces with extremely high architectural value.

Also, the increasing demand to improve soundproofing and thermal insulation in buildings, means that tiles must now be laid on substrates with different characteristics than those normally used.

We must also stress how our awareness of the quality of the air and surroundings in our homes and in the workplace has developed in recent years.

MAPEI research has undertaken the challenge to address these demands, and has developed products with increasingly sophisticated formulations which are easy to use and apply, guarantees the durability of ceramic and stone flooring and coatings and respects the environment and the health of floor layers, and all those who use the environments in which they have been applied.

MAPEI can now boast a complete range of products adapted to all installation systems, on any scale. The range includes cementitious adhesives, paste adhesives, hydraulic binders for screeds, primers, levelling compounds, grouts, sealants and ancillary products suitable for applications until recently considered technically impossible but that now open up a number of exciting new possibilities:

- repair work without costly demolition;
- increased speed and efficiency in the execution of work. As a result, work is completed more rapidly;
- progressive elimination of dangerous products from construction sites;
- grouts and joints that are not only functional, but may also serve as decorative features;
- systems for the installation of ceramic tiles on façades on layers of thermal insulation (**Mapetherm Tile System**).

EN 12004
IN COMPLIANCE WITH EUROPEAN STANDARDS
MAPEI
ADHESIVES FOR CERAMIC TILES

All MAPEI adhesives for ceramics and stone materials conform to EN 12004 Standard

CE
EN 12004

All MAPEI adhesives have been awarded the CE mark in compliance with Annex ZA, EN 12004 Standard

# HOW TO CHOOSE THE RIGHT ADHESIVE?

When installing ceramic tiles, the adhesive is used to create a strong, durable bond between the tiles and the tiling substrate. To choose the most suitable adhesive, the specific requirements of each project (the area where the tiles are installed, service conditions when in use, type of substrate, dimensions of the tiles, etc.) and any installation constraints (installation schedule, installation technique, etc.) must all be taken into consideration. MAPEI proposes a vast range of adhesives which are classified according to EN 12004 or ISO 13007-1 Standards, based on the following criteria:

- **Chemical composition:**
  – Cementitious (**C**), adhesives made from a mixture of hydraulic binders, aggregates and chemical admixtures. They may be either a one-component type, which means they just need to be blended with water, or a two-component type, which means they are blended with water and/or latex;
  – Dispersion (**D**), a mixture of organic binders dispersed in water polymers with organic admixtures;
  – Reactive (**R**), a mixture of synthetic resins which harden through a chemical reaction (components A and B).

- **Adhesion capacity:**
  – **Class 1**: Normal adhesives;
  – **Class 2**: Improved adhesives;
  Classes 1 and 2 are always followed by letter F in case of quick setting adhesives.

- **Optional classes:**
  – **Class T**: Reduced slip adhesives;
  – **Class E**: Adhesives with extended open time;
  – **Class S1**: Deformable adhesives (for cementitious adhesives only);
  – **Class S2**: Highly deformable adhesives (for cementitious adhesives only).

Apart from the main guidelines explaining how to use the product correctly, the packaging for each MAPEI product also indicates the relative certification of the product and its main technical characteristics. For all information regarding the technical characteristics of MAPEI products and instructions on how to use them correctly, refer to the specifications contained in each product's relative Technical Data Sheet, available for viewing or download at the company' official website *www.mapei.com*.
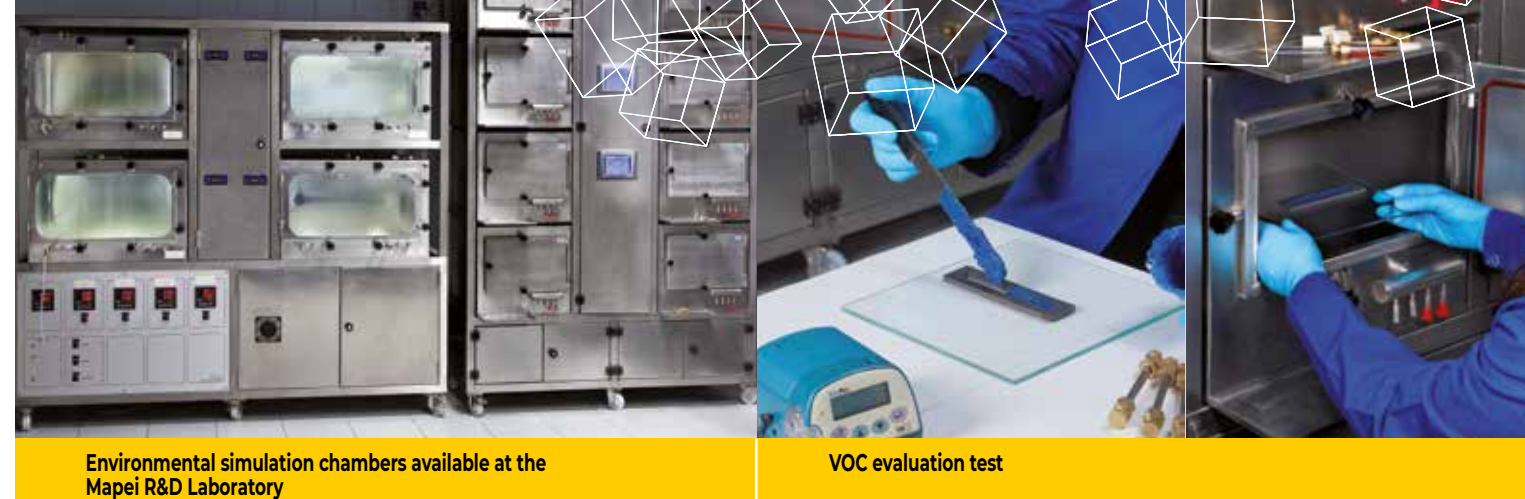
LIVING COMFORT: VOC

Numerous factors can have an effect on the quality of the air inside our homes: human behaviour, ventilation, products used in the home such as detergents, furniture and even building products all give off volatile organic compounds (VOC) which have an influence on the air in confined spaces.

Mapei has developed a series of solvent-free products with low emission of volatile organic compounds (VOC) enabling them to guarantee good air quality inside buildings for the well-being of both those who use and apply the products and those who use the buildings. For more than 20 years, Mapei's R&D analysis laboratory has been evaluating VOC emissions of Mapei products using techniques prescribed by current national and international norms and standards.

Since 2005, products with very low emission of volatile organic compounds have been certified **EMICODE EC1** and **EMICODE EC1PLUS** (very low emission of volatile organic compounds-PLUS). Both marks are awarded by **GEV** (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an association that checks emission levels of flooring products, adhesives and various materials used in the building industry, of which we are a member. Mapei is also proud to announce the other voluntary labels it applies to its products to comply with the various requirements of local markets, as well as with obligatory requirements currently enforced in Germany, France, Belgium and, since 2017, in Italy.

MAPEI

TRANSPARENCY: EPD

An **Environmental Product Declaration** (EPD) is a report prepared according to international standards (such as ISO 14025 and EN 15804) that documents the effects a product has on the environment throughout its entire life cycle, by measuring these effects according to standardised LCA (Life Cycle Assessment) methods.

In the construction sector, EPDs help architects, design engineers and other buyers have a better understanding of a product's characteristics in terms of sustainability and its impact on the environment.

Mapei does much more than evaluating its impact.

Since 2012 we have offset more than 50,000 tonnes of CO_2 associated with the production of Keraflex Maxi S1 zerø in Italy through the acquisition of certified carbon credits: in 2017 credits were acquired for a reforestation project for an area of more than 21,000 Hectares in Uruguay that had been previously deforested and left to deteriorate.

Which makes Keraflex Maxi S1 zerø the first and only fully offset adhesive for ceramic.

MAPEI
and Sustainability:
Making green easy

LCA
THE LIFE CYCLE OF MAPEI PRODUCTS

- NATURAL RESOURCES
- RAW MATERIALS
- RECYCLING
- TRANSFORMATION
- WASTE
- PRODUCTION
- USE AND MAINTENANCE
- APPLICATION

Ultracolor Plus
Model EPD
"Modified mineral mortars, group 1"
(Declaration number EPD-FEI-20160017-IBG1-EN)

Keraflex Maxi S1
Model EPD
"Modified mineral mortars, group 2"
(Declaration number EPD-FEI-20160042-IBG1-EN)

ENVIRONMENTAL PRODUCT DECLARATION
In accordance with ISO 14025 for
Granirapid (grey & white)
Elastorapid (grey & white)
Kerabond (grey & white) + 50% *Isolastic*
Kerabond (grey & white) + 100% *Isolastic*

CERTIFIED QUALITY

CE MARKING
All MAPEI adhesives have been awarded CE marking in compliance with Euronorm EN 12004 annex ZA, as prescribed by the current European Directive 89/106/EEC.
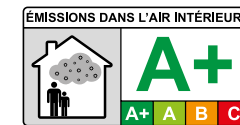
EMICODE EC1R PLUS
Certification for "products with very low emission of volatile organic compounds" issued by GEV (association which monitors emissions from construction materials).

Other labels

www.blauer-engel.de/uz113

M1

ÉMISSIONS DANS L'AIR INTÉRIEUR*
A+ A B C

* Information sur le niveau d'émission de substances volatiles dans l'air intérieur présentant un risque de toxicité par inhalation, sur une échelle de classe allant de A+ (très faibles émissions) à C (fortes émissions)

EPD
EPD describes the environmental impact of a product throughout its entire life cycle by measuring its impact using standardised LCA (Life Cycle Assessment) methods.

LEED
LEED is a voluntary system for the design, construction and management of sustainable buildings. LEED indicates the requirements for constructing environmentally sustainable buildings in terms of energy and the consumption of natural resources involved in the construction process.

EN 12004
ISO 13007-1
All MAPEI mortars for installing and grouting ceramic tiles and stone conform to Euronorms EN 12004 and the international standards ISO 13007-1.

ULTRALITE
Lightweight products.

LOW DUST
Low Dust technology has also been developed to safeguard the health of those who handle and apply such products, the amount of dust produced during the mixing phase with water is drastically reduced. Products which feature this technology are easily recognised by the **Low Dust** logo.

LEED

In 1998, the US GBC (United States Green Building Council) introduced the first LEED (leadership in Environment) standard and Green Building Rating System as guidance on the design and construction of sustainable buildings. And it has now become the most widely adopted green building protocol in the world.

LEED v4 is the new version of the American protocol: Mapei products help earn important credits in the Materials and Resources (MR) and Internal Environmental Quality (EQ) categories.

MR [Building Product Disclosure and Optimization – Environmental Product Declarations]
The use of products and materials with information on their life-cycle is required: specific product EPDs and category EPDs are both accepted, but each one counts differently.

EQ Credit - [Low-Emitting Materials]
Includes both emissions of volatile organic compounds (VOC) into the air inside buildings and the total VOC content of the materials.

MAPEI

CERTIFICATIONS

	CE	EN 12004	GEV EMICODE	Low Dust	Ultralite Technology	Fast Track Ready	MR	EQ
NORMAL-SETTING HYDRAULIC BINDER-BASED ADHESIVES *								
ADESILEX P9	EN 12004	C2TE	EC1 R Plus				•	•
ADESILEX P10	EN 12004	C2TE	EC1 R Plus				•	•
ADESILEX P10 + ISOLASTIC AL 50%	EN 12004	C2ES1						
KERABOND	EN 12004	C1	EC1 R Plus				•	•
KERABOND + ISOLASTIC	EN 12004	C2ES2					•	
KERABOND PLUS	EN 12004	C2E	EC1 R Plus				•	•
KERABOND PLUS + ISOLASTIC	EN 12004	C2ES2					•	
KERAFLEX	EN 12004	C2TE	EC1 R Plus				•	•
KERAFLEX EASY S1	EN 12004	C2ES1	EC1 R Plus				•	•
KERAFLEX MAXI S1	EN 12004	C2TES1	EC1 R Plus	•			•	•
KERAFLEX MAXI S1 ZERØ	EN 12004	C2TES1	EC1 R Plus	•			•	•
KERASET	EN 12004	C1	EC1 R Plus				•	•
TIXOBOND WHITE	EN 12004	C1TE	EC1 R Plus				•	•
ULTRALITE S1	EN 12004	C2TES1	EC1 R Plus	•	•		•	•
ULTRALITE S2	EN 12004	C2ES2	EC1 R Plus		•		•	•
ULTRALITE FLEX	EN 12004	C2TE	EC1 R Plus	•	•		•	•
FAST-SETTING HYDRAULIC BINDER-BASED ADHESIVES *								
ADESILEX P4	EN 12004	C2F	EC1 R Plus			•	•	•
ADESILEX P9 EXPRESS	EN 12004	C2FE	EC1 R Plus			•	•	•
ELASTORAPID	EN 12004	C2FTES2				•	•	•
GRANIRAPID	EN 12004	C2FS1	EC1 R Plus			•	•	•
KERAQUICK MAXI S1	EN 12004	C2FTS1	EC1 R Plus			•	•	•
KERAQUICK MAXI S1 + LATEX PLUS	EN 12004	C2FTS2						
ULTRALITE S1 QUICK	EN 12004	C2FTS1			•	•	•	•
ULTRALITE S2 QUICK	EN 12004	C2FES2	EC1 R Plus	•	•	•	•	•
SYNTHETIC RESIN-BASED ADHESIVES *								
ADESILEX P22	EN 12004	D1TE						•
ULTRAMASTIC III	EN 12004	D2TE						•
REACTIVE ADHESIVES *								
KERALASTIC	EN 12004	R2						•
KERALASTIC T	EN 12004	R2T						•
KERAPOXY ADHESIVE	EN 12004	R2T						•
ULTRABOND ECO PU 2K	EN 12004	R2T	EC1 R Plus				•	•

* Apart from international standards, the products used to install ceramic tiles also comply with the current national standards of various countries

NORMAL-SETTING HYDRAULIC BINDER-BASED ADHESIVES

Adesilex P9

▶ High-performance cementitious adhesive with extended open time, reduced slip, with very low emission level of volatile organic compounds, for ceramic tiles and stone materials.
The white version has very high white balance and excellent workability.

Adesilex P10

▶ High-performance, white cementitious adhesive with reduced slip, extended open time for glass mosaic, ceramic and marble coatings.

Isolastic

▶ Elasticising latex mixed with KERABOND, KERABOND T, KERABOND PLUS and ADESILEX P10. When KERABOND, KERABOND T and KERABOND PLUS are mixed with ISOLASTIC they form a high-performance, highly deformable adhesive with extended open time (C2E/S2). When ADESILEX P10 is mixed with ISOLASTIC (dilution rate 1:1 with water), it forms a high-performance, highly deformable adhesive with extended open time (C2E/S1).

Kerabond

▶ Cementitious adhesive with very low emission level of volatile organic compounds for ceramic tiles.

Kerabond Plus

▶ High-performance, extended open time, cementitious adhesive for ceramic tiles and stone materials.

Keraflex

▶ High-performance cementitious adhesive with extended open time, reduced slip, very low emission level of volatile organic compounds for ceramic and stone tiles.
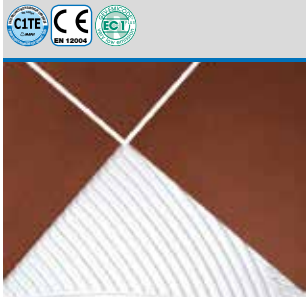
Keraflex Easy S1

▶ Easy-to-apply, extended open time, high-performance cementitious adhesive with high wetting properties, for ceramic and stone tiles. Very low emission level of volatile organic compounds. Particularly suitable for laying large porcelain tiles on large spreads of flooring areas.
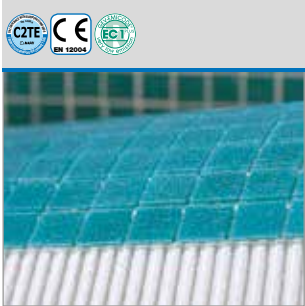
Keraflex Maxi S1

▶ High-performance deformable cementitious ultra-white, adhesive with reduced slip, excellent workability, extended open time and Low Dust technology with very low emission level of volatile organic compounds for ceramic tiles, particularly recommended for laying large porcelain and natural stone tiles (thickness of adhesive from 3 to 15 mm).

Keraflex Maxi S1 zerø

▶ High-performance cementitous grey adhesive with reduced slip, Low Dust technology, extended open time and deformable. Suitable for laying large-sized ceramic tiles and stone material, with very low emission level of volatile organic compounds and offset residual greenhouse gas emissions.

Keraset

▶ Cementitious adhesive with very low emission level of volatile organic compounds for ceramic tiles.

Tixobond White

▶ High-performance, ultra-white cementitious adhesive with reduced slip and long open time with very low emission level of volatile organic compounds for ceramic tiles (thickness of adhesive up to 15 mm).
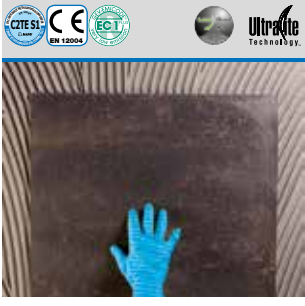
Ultralite S1

▶ One-component, high-performance, lightweight, deformable cementitious adhesive with no vertical slip, long open time, Low Dust technology and extremely high yield, easy to apply by trowel, excellent back-buttering capacity, with very low emission level of volatile organic compounds, for ceramic tiles and stone material.

MAPEI

Ultralite S2

▶ One-component, high-performance, highly-deformable, lightweight cementitious adhesive with extended open time, very high yield, very low emission level of volatile organic compounds, easy to trowel and good buttering capacity, for ceramic tiles and stone, ideal for thin porcelain tiles.

Ultralite Flex

▶ One-component high-performance lightweight cementitious adhesive with reduced slip, fair deformability, extended open time, Low Dust technology, very high yield, good trowelability and excellent back-buttering capacity with very low emission level of volatile organic compounds for ceramic tiles, stone and thin porcelain tiles.

SYNTHETIC RESIN-BASED ADHESIVES
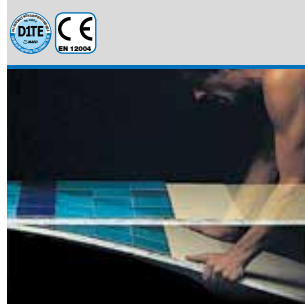
Adesilex P22

▶ Ready-to-use adhesive paste with reduced slip and long open time for ceramic tiles.

Ultramastic III

▶ Ready-to-use, high-performance adhesive paste with reduced slip and long open time, for laying ceramic tiles on walls and floors.

FAST-SETTING HYDRAULIC BINDER-BASED ADHESIVES

Adesilex P4

▶ High-performance, self-buttering, quick-setting grey cementitious adhesive with very low emission level of volatile organic compounds for ceramic tiles and stone material (thickness of adhesive from 3 to 20 mm).

N.B. May also be used for smoothing internal and external surfaces.

Adesilex P9 Express

▶ High performance, quick-setting cementitious with extended open time and extended workability, for ceramic tiles.
The white version has very high white balance.

Elastorapid

▶ Two-component, high-performance, highly-deformable, quick-setting and drying cementitious adhesive with reduced slip and extended open time for ceramic tiles and stone material.

Granirapid

▶ Two-component, high-performance, deformable, quick-setting and drying cementitious adhesive with very low emission level of volatile organic compounds for ceramic tiles and stone material.

Keraquick Maxi S1

▶ High-performance, rapid-setting and hydrating deformable, slip resistant cementitious adhesive with extended open time and extended workability for ceramic tiles and particularly recommended for stone materials, also suitable for large size format. With very low emission level of volatile organic compounds. For thickness of adhesive up to 15 mm.
The white version has very high white balance.

Latex Plus

▶ Elasticising latex mixed with KERAQUICK MAXI S1. When KERAQUICK MAXI S1 is mixed with LATEX PLUS it forms a high-performance, quick-setting, highly-deformable adhesive with no vertical slip (C2F/S2).

Ultralite S1 Quick

▶ One-component, high-performance, deformable, lightweight, rapid-setting and hydrating cementitious adhesive with reduced slip, good trowelability, high wetting capacity and very high yield, for ceramic tiles, stone and thin porcelain tiles.

Ultralite S2 Quick

▶ One-component, high-performance, highly-deformable, lightweight, rapid-setting and hydrating cementitious adhesive with extended open time, good trowelability, very low emission level of volatile organic compounds, high wetting capacity and extremely high yield, for ceramic tiles and stone, ideal for installing thin porcelain tiles.

REACTIVE ADHESIVES

Keralastic

▶ Two-component, high-performance epoxy-polyurethane adhesive for ceramic tiles and stone material.

Keralastic T

▶ Two-component, high-performance epoxy-polyurethane adhesive with reduced slip for ceramic tiles and stone material.

Kerapoxy Adhesive

▶ Two-component epoxy adhesive with reduced slip for ceramic tiles and stone material.

Ultrabond Eco PU 2K

▶ Two-component, solvent-free, high-performance polyurethane adhesive with reduced slip and very low emission level of volatile organic compounds for ceramic and stone material.

MAPEI

ADHESIVES FOR INSTALLING CERAMIC TILES, MOSAICS AND STONE **ON INTERNAL FLOORS**

FLOOR	CERAMIC TILES AND MOSAICS						STONE				
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Porcelain tiles or klinker		Single-fired, double-fired or terracotta		Dimensionally-stable stone (class A according to MAPEI classification system) not sensitive to staining		Stone with poor dimensional stability (class B according to MAPEI classification system) or stone sensitive to staining		Stone with **no** dimensional stability (class C according to MAPEI classification system) or resin-based recomposed material sensitive to heat
	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	
Cementitious screeds and screeds made from special binders	ADESILEX P10	ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERABOND PLUS ADESILEX P9 KERAFLEX	ADESILEX P9 EXPRESS GRANIRAPID ULTRALITE S1 QUICK	KERABOND ADESILEX P9 KERAFLEX	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX	ADESILEX P4 KERAQUICK MAXI S1 + LATEX PLUS ULTRALITE S1 QUICK ULTRALITE S2 QUICK GRANIRAPID ELASTORAPID	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 KERAQUICK MAXI S1 + LATEX PLUS ULTRALITE S1 QUICK ULTRALITE S2 QUICK GRANIRAPID ELASTORAPID	KERALASTIC KERAPOXY ADHESIVE ULTRABOND ECO PU 2K
Concrete floor slabs and flooring	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	ELASTORAPID ULTRALITE S1 QUICK	ADESILEX P9 KERAFLEX KERAFLEX EASY S1	ULTRALITE S1 QUICK GRANIRAPID KERAQUICK MAXI S1	KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ				
Anhydrite screeds (with PRIMER G or ECO PRIM T)	ADESILEX P10	ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERABOND PLUS ADESILEX P9 KERAFLEX	ADESILEX P9 EXPRESS GRANIRAPID ULTRALITE S1 QUICK	KERABOND ADESILEX P9 KERAFLEX	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX EASY S1				
Heated screeds	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	ADESILEX P9 EXPRESS ELASTORAPID ULTRALITE S1 QUICK	KERABOND PLUS ADESILEX P9 KERAFLEX	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK GRANIRAPID	KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ				
Existing ceramic, terrazzo or natural stone floors	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	ELASTORAPID ULTRALITE S1 QUICK	ADESILEX P9 KERAFLEX	ULTRALITE S1 QUICK GRANIRAPID	KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ				
Surfaces waterproofed with MAPELASTIC or MAPEGUM WPS	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	ADESILEX P9 EXPRESS ELASTORAPID ULTRALITE S1 QUICK	KERAFLEX	ADESILEX P9 EXPRESS ELASTORAPID ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ				
Marine plywood	KERABOND PLUS + ISOLASTIC KERABOND + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID		KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K
Chipboard	KERABOND PLUS + ISOLASTIC KERABOND + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID KERAQUICK MAXI S1 + LATEX PLUS	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID KERAQUICK MAXI S1 + LATEX PLUS	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID KERAQUICK MAXI S1 + LATEX PLUS	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID KERAQUICK MAXI S1 + LATEX PLUS		KERAQUICK MAXI S1 + LATEX PLUS	
Existing PVC, rubber or linoleum floors	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS		KERAQUICK MAXI S1 + LATEX PLUS	
Metal surfaces	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS		KERAQUICK MAXI S1 + LATEX PLUS	

KEY
HYDRAULIC BINDER-BASED adhesive
EPOXY-POLYURETHANE adhesive
EPOXY adhesive
POLYURETHANE adhesive

The installation suggestions in this table are to be considered merely for indication purposes and refer only to normal conditions. For further information, refer to the relative Technical Data Sheet for each product. Defining the most suitable installation system is highly influenced by the conditions on site and the format of the tiles to be installed. For all special cases, contact Mapei Technical Services Department or the relative technical notebooks.

MAPEI®

ADHESIVES FOR INSTALLING CERAMIC TILES, MOSAICS AND STONE **ON INTERNAL WALLS**

WALLS — TYPE OF SUBSTRATE	CERAMIC TILES AND MOSAICS — Glass mosaics or ceramic tiles		Porcelain tiles or klinker		Single-fired, double-fired or terracotta		STONE — Dimensionally-stable stone (class A according to MAPEI classification system) not sensitive to staining		Stone with poor dimensional stability (class B according to MAPEI classification system) or stone sensitive to staining		Stone with **no** dimensional stability (class C according to MAPEI classification system) or resin-based recomposed material sensitive to heat
	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	
Cementitious render or skim coats	ADESILEX P10 ULTRAMASTIC III	ULTRALITE S1 QUICK KERAQUICK MAXI S1	ADESILEX P9 KERAFLEX ULTRAMASTIC III	ADESILEX P9 EXPRESS GRANIRAPID ULTRALITE S1 QUICK	TIXOBOND WHITE KERABOND ADESILEX P9 ADESILEX P22	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX	KERAQUICK MAXI S1 ADESILEX P4 KERAQUICK MAXI S1 + LATEX PLUS GRANIRAPID ULTRALITE S1 QUICK ULTRALITE S2 QUICK ELASTORAPID	KERALASTIC T ULTRABOND ECO PU 2K		KERALASTIC T KERAPOXY ADHESIVE ULTRABOND ECO PU 2K
Concrete	ADESILEX P10 + ISOLASTIC 50% ULTRAMASTIC III	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRAMASTIC III	ELASTORAPID ULTRALITE S1 QUICK	ADESILEX P9 KERAFLEX ADESILEX P22	GRANIRAPID ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1				
Expanded or cellular cement blocks (with PRIMER G or ECO PRIM T)	ADESILEX P10 ULTRAMASTIC 5	ULTRALITE S1 QUICK KERAQUICK MAXI S1	ADESILEX P9 KERAFLEX ULTRAMASTIC 5	ADESILEX P9 EXPRESS GRANIRAPID ULTRALITE S1 QUICK	TIXOBOND WHITE KERABOND ADESILEX P9 ULTRAMASTIC 5	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX			KERAQUICK MAXI S1 KERAQUICK MAXI S1 + LATEX PLUS GRANIRAPID ULTRALITE S1 QUICK ULTRALITE S2 QUICK ELASTORAPID	
Lime-based skim coats or render (with PRIMER G or ECO PRIM T)	ADESILEX P10 ULTRAMASTIC III (*)	ULTRALITE S1 QUICK KERAQUICK MAXI S1	ADESILEX P9 KERAFLEX ULTRAMASTIC III (*)	ADESILEX P9 EXPRESS GRANIRAPID ULTRALITE S1 QUICK	TIXOBOND WHITE KERABOND ADESILEX P9 ADESILEX P22 (*)	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX				
Plasterboard	ADESILEX P10 ULTRAMASTIC III	ULTRALITE S1 QUICK KERAQUICK MAXI S1	ADESILEX P9 KERAFLEX ULTRAMASTIC III	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK GRANIRAPID	ADESILEX P9 KERAFLEX ADESILEX P22	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX				
Surfaces waterproofed with MAPEGUM WPS or MAPELASTIC	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1	ADESILEX P9 EXPRESS ELASTORAPID ULTRALITE S1 QUICK	ADESILEX P9 KERAFLEX	ADESILEX P9 EXPRESS GRANIRAPID ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1				
Chipboard	KERABOND + ISOLASTIC KERALASTIC T ULTRABOND ECO PU 2K ULTRAMASTIC III	ELASTORAPID KERAQUICK MAXI S1 + LATEX PLUS	KERABOND PLUS + ISOLASTIC KERALASTIC T ULTRABOND ECO PU 2K ULTRAMASTIC III	KERAQUICK MAXI S1 + LATEX PLUS ELASTORAPID	KERABOND PLUS + ISOLASTIC KERALASTIC T ULTRABOND ECO PU 2K ULTRAMASTIC III	KERAQUICK MAXI S1 + LATEX PLUS ELASTORAPID	KERABOND PLUS + ISOLASTIC KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K
Cement-fibre panels (with PRIMER G or ECO PRIM T)	ADESILEX P10 ULTRAMASTIC 5	ULTRALITE S1 QUICK KERAQUICK MAXI S1	ADESILEX P9 KERAFLEX ULTRAMASTIC 5	ADESILEX P9 EXPRESS GRANIRAPID ULTRALITE S1 QUICK	TIXOBOND WHITE KERABOND ADESILEX P9 ULTRAMASTIC 5	ADESILEX P9 EXPRESS ULTRALITE S1 QUICK KERAQUICK MAXI S1	KERAFLEX	GRANIRAPID ULTRALITE S1 QUICK		GRANIRAPID ULTRALITE S1 QUICK KERAQUICK MAXI S1	
Metal surfaces	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK MAXI S1 + LATEX PLUS	

KEY
HYDRAULIC BINDER-BASED adhesive
EPOXY-POLYURETHANE adhesive
EPOXY adhesive
READY-TO-USE adhesive DISPERSION
POLYURETHANE adhesive

(*) apply PRIMER G or ECO PRIM T beforehand

The installation suggestions in this table are to be considered merely for indication purposes and refer only to normal conditions. For further information, refer to the relative Technical Data Sheet for each product. Defining the most suitable installation system is highly influenced by the conditions on site and the format of the tiles to be installed. For all special cases, contact Mapei Technical Services Department or the relative technical notebooks.

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ADHESIVES FOR INSTALLING CERAMIC TILES, MOSAICS AND STONE **ON EXTERNAL SURFACES**

FLOOR	CERAMIC TILES AND MOSAICS				STONE				
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Grès porcellanato, klinker, monocottura o cotto		Dimensionally-stable stone (class A according to MAPEI classification system) not sensitive to staining		Stone with poor dimensional stability (class B according to MAPEI classification system) or stone sensitive to staining		Stone with **no** dimensional stability (class C according to MAPEI classification system) or resin-based recomposed material sensitive to heat
	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	
Cementitious screeds and screeds made from special binders	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	GRANIRAPID ULTRALITE S1 QUICK	KERABOND PLUS KERAFLEX EASY S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1	ULTRALITE S1 QUICK GRANIRAPID KERAQUICK MAXI S1	KERAPOXY ADHESIVE	ULTRALITE S1 QUICK GRANIRAPID KERAQUICK MAXI S1 ELASTORAPID	KERALASTIC T KERAPOXY ADHESIVE ULTRABOND ECO PU 2K
Surfaces waterproofed with MAPELASTIC			KERAFLEX EASY S1 ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	ELASTORAPID ULTRALITE S1 QUICK ULTRALITE S2 QUICK	KERAFLEX EASY S1 ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC				
Concrete			KERAFLEX EASY S1 ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	ELASTORAPID ULTRALITE S1 QUICK ULTRALITE S2 QUICK	KERAFLEX EASY S1 ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC				

WALLS AND FAÇADES	CERAMIC TILES AND MOSAICS				STONE				
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Grès porcellanato, klinker, monocottura o cotto		Dimensionally-stable stone (class A according to MAPEI classification system) not sensitive to staining		Stone with poor dimensional stability (class B according to MAPEI classification system) or stone sensitive to staining		Stone with **no** dimensional stability (class C according to MAPEI classification system) or resin-based recomposed material sensitive to heat
	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	
Cementitious render or concrete	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	ELASTORAPID KERAQUICK MAXI S1 + LÀTEX PLUS ULTRALITE S1 QUICK ULTRALITE S2 QUICK	ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	ULTRALITE S2 QUICK GRANIRAPID KERAQUICK MAXI S1 ELASTORAPID	KERAPOXY ADHESIVE	ULTRALITE S2 QUICK GRANIRAPID KERAQUICK MAXI S1 ELASTORAPID	KERALASTIC T KERAPOXY ADHESIVE ULTRABOND ECO PU 2K

SWIMMING POOLS, TANKS, etc.	CERAMIC TILES AND MOSAICS				STONE				
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Grès porcellanato, klinker, monocottura o cotto		Dimensionally-stable stone (class A according to MAPEI classification system) not sensitive to staining		Stone with poor dimensional stability (class B according to MAPEI classification system) or stone sensitive to staining		Stone with **no** dimensional stability (class C according to MAPEI classification system) or resin-based recomposed material sensitive to heat
	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	
Cementitious screeds, screeds made with special binders, concrete and surfaces waterproofed with MAPELASTIC	ADESILEX P10 + ISOLASTIC 50% ULTRALITE S1	ELASTORAPID	ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	GRANIRAPID ELASTORAPID ULTRALITE S1 QUICK ULTRALITE S2 QUICK	ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	GRANIRAPID ELASTORAPID ULTRALITE S1 QUICK ULTRALITE S2 QUICK			
Fibreglass	KERAPOXY ADHESIVE		KERAPOXY ADHESIVE		KERAPOXY ADHESIVE				

KEY

HYDRAULIC BINDER-BASED adhesive

EPOXY-POLYURETHANE adhesive

EPOXY adhesive

POLYURETHANE adhesive

(*) apply PRIMER G or ECO PRIM T beforehand

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