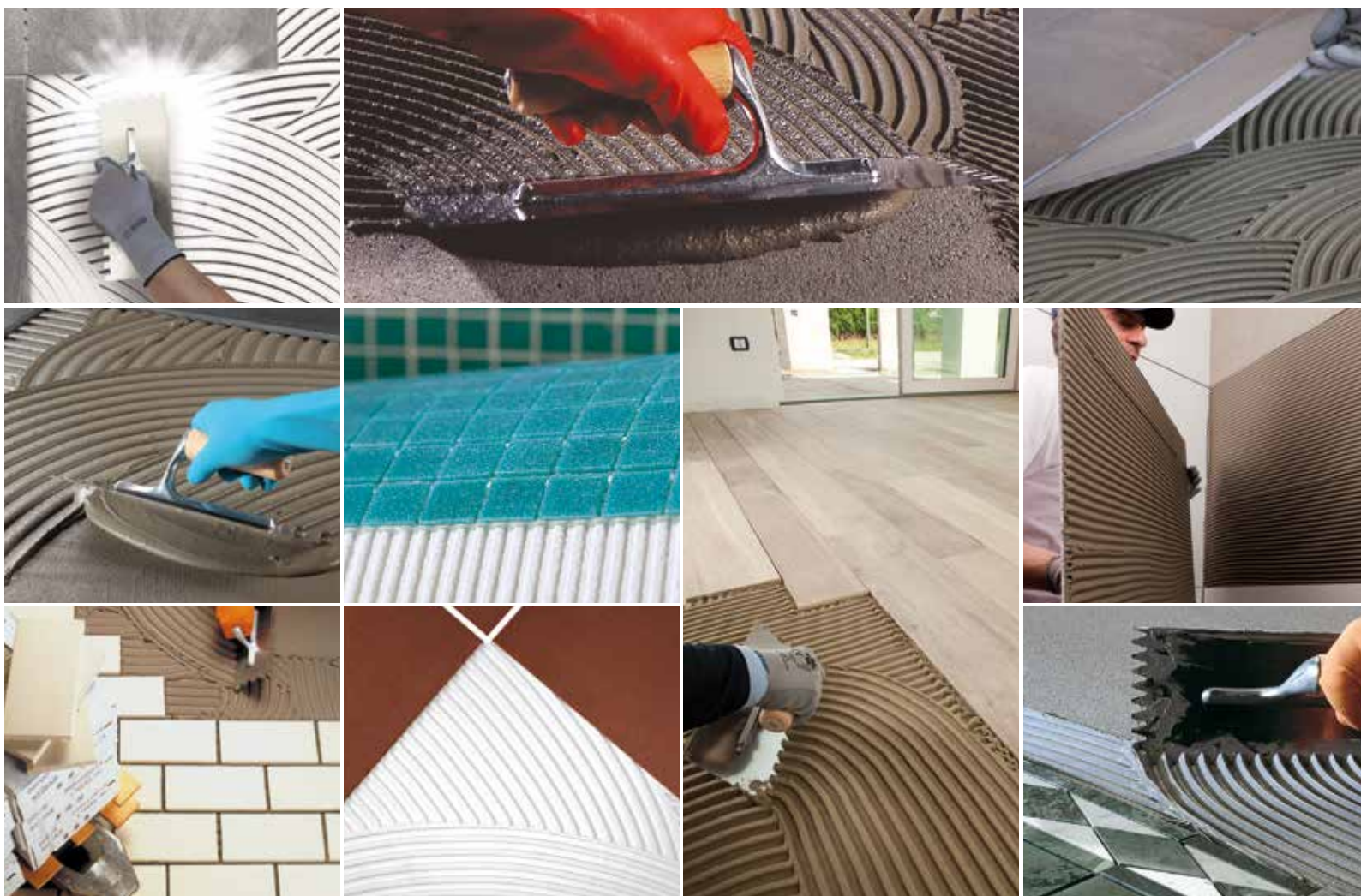# SELECTION CHART OF ADHESIVES FOR CERAMIC TILES AND STONE MATERIAL

**Skyway Monte Bianco
Courmayeur - Italy**

**La Llotja de Palma, an ancient building in
Palma de Mallorca - Spain**

**Ferrari - Maserati Showroom
Jeddah - Arabia Saudita**

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**).

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

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*.

Melbourne International Airport - Australia

Passeig Germanies Valencia - Spain

Shopping centre Il Centro Arese - Italia

THE ENVIRONMENT AND MAPEI RESEARCH

VOC what are they?

We are all aware about the dangers from environmental pollution, and we all know, the damage that benzene from cars can do to our wellbeing.

There is also another type of pollution around us called "INDOOR POLLUTION". In fact, the quality of the air around us is heavily influenced by all the volatile organic compounds (VOC) emitted from furniture, adhesives and paint. Have all at sometime perceived a strong odour after applying a product, assembling a piece of furniture or painting the walls in our home. We have all had to open the windows in an effort to get rid of a strange smell. Or just cleaning the floors in our home, we sometimes smell strong odours which may irritate us. All these odours are due to the volatility of certain compounds contained in the wood used to make furniture, in varnishes and in detergents: these compounds are named VOC (Volatile Organic Compunds).

Sometimes it isn't possible to detect VOC's, sometimes they may have no effect on people's health or sometimes they may be harmful. VOC's may even be cancerogeneous, such as benzene given off by cars.

How do VOC influence our day to day life in our homes?

We spend around 90% of our time in closed environments: the home, the work, the school, the cinema,... .

It is widely known that most volatile organic compounds can be irritating for our mucous membranes; many of them have a highly concentrated neuro-toxic action (benzene, toluene, cyclohexane, styrene and chlorines), while others are thought or known to cause cancer (formaldehyde and benzene).

Certain types of furniture are "famous" for their emission of formaldehyde, while pine wood releases certain substances which have a pleasant smell, but may also be irritating.

This is why it is so important to guarantee good quality air in the buildings we use by modifying our behaviour and using products which emit the lowest possible amount of volatile organic compounds.

Mapei's engagement

For more than 10 years, Mapei's R&D analysis laboratory has been assessing the eco-sustainability of Mapei products using techniques prescribed by current standards and instruments which only the best-equipped laboratories have access to.

There are currently twelve environmental simulation chambers in Mapei's R&D laboratories dedicated to evaluating the VOC content of products for the building industry in compliance with ISO 16000 standards (Indoor Air and EN 16516).

The product to be tested is placed on a sheet of non-absorbent glass with a defined surface area, weighed and then immediately transferred into one of the environmental simulation chambers available in our laboratory. The ratio between the area of the sample and the volume of the chamber is very important, in that it simulates the real situation found in an apartment (floor area/room volume ratio).

The temperature and relative humidity in the chambers is tightly controlled (T = 23°C and R.H. = 50%), and they are flushed with purified air. The flow of air means that the air in the chamber is completely exchanged every two hours.

After 3 and 28 days, a sample of the air in the chamber is taken using special pumps and cartridges which hold all the VOC.

The cartridges are then developed with GC/MS (gas chromatography/mass spectrometry) to obtain a type-quantitative analysis of the VOC present in the air in the chambers.

Environmental simulation chambers available at the Mapei R&D laboratory | Test to measure VOC emissions

EUROPEAN LABELLING SYSTEM

GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.) Emicode

EMICODE is a voluntary system to classify products according to their VOC emissions. The EC1 and EC1 Plus marks are awarded by the GEV Institute (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an association which checks the emission levels of products used for floors, adhesives and various materials used in the building industry, and of which MAPEI is a member.

First of all, a product classified EC1 Plus or EC1 must contain no solvents and is not labelled as being toxic.

With an environmental simulation chamber, the emission of volatile organic compounds is measured after 3 and 28 days: this parameter is called TVOC (Total Volatile Organic Compounds). It is expressed in µg/m^3 and is the sum of the concentrations of all the volatile compounds. After 3 days the level of cancerogeneous compounds must also be measured, such as benzene (limit = 2 µg/m^3), formaldehyde (limit = 50 µg/m^3) and any other residual monomers. After 28 days, on the other hand, the level of semi-volatile compounds is also measured, and then all the concentrations are added together: this parameter is called TSVOC (Total Semi-Volatile Organic Compounds). Semi-volatile compounds are all those substances with a high boiling point, such as certain types of plasticiser, which remain in the environment for a long time and which decrease very slowly. Even though almost all these substances are neither toxic nor harmful to a person's health, it is just as important to measure their emissions, in that they have an effect on the quality of internal air for a very long time.

The following table contains the limits set by GEV to classify a product with the EMICODE label.

|	µg/m^3 after 3 days TVOC	µg/m^3 after 28 days TVOC / TSVOC
EC 1 PLUS	750	60 / 40
EC 1	1000	100 / 50
EC 2	3000	300 / 100

BLAUER ENGEL

Blauer Engel differs from other rating and evaluation systems because it is not divided into different classes, but is rather a single classification: the product either complies or does not comply with it. The TVOC limits, again after 3 days and 28 days, are the same as for a product with the EC1 label. Blauer Engel also "forbids" certain compounds, such as cancerogeneous compounds, certain biocides and phthalates. Just like the Emicode label, Blauer Engel is also voluntary.

M1

The M1 label, widely used in Scandinavian countries, is also voluntary and is used to evaluate VOC emissions from building products. M1 also evaluates odours and ammoniac emissions.
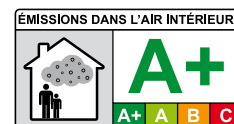
ÉMISSIONS DANS L'AIR INTÉRIEUR

Since September 2011 a new certification regime has been used in France for building products.

This classification system has been obligatory since 2011 for all products introduced onto the market after that date and will be extended to include all building products as of September 2013.

The "Sanitaire Logo", the name given to the label used to classify products, is based on the evaluation of emissions from a product measured in an environmental simulation chamber 28 days after application.

Limits for TVOC and for 11 organic compounds in particular have been set (formaldehyde, acetaldehyde, toluene, tetrachloroethylene, Xylene, 1,2,4-trimethylbenzene, 1,4-diclorobenzene, ethyl benzene, n-butylacetate, 2-butoxyethanol and styrene). Every product checked is then classified, from A+ (very low emissions) to C (high emissions).

LEED

In 1998, the USGBC (United States Green Building Council) introduced the first standard LEED Green Building Rating System as a guide for the design and construction of sustainable buildings. More and more architects and construction companies are requiring LEED certification as an advantage to offer their clientele.

According to the USGBC, LEED (Leadership in Energy and Environmental Design) represents excellence in energy and eco-sustainable design and encourages and accelerates the adoption of building practices and eco-sustainable development on a global scale through the creation and application of performance standards which are universally shared and accepted. LEED is a voluntary system based on consent for the design, construction and management of high-performance sustainable buildings. The LEED certification system is a standard applied in more than 100 countries worldwide, including in Italy, which, thanks to the commitment of GBC ITALIA, has created a local version to indicate the requirements for constructing environmentally sustainable buildings in terms of energy and the consumption of environmental resources involved in the construction process. MAPEI develops products and systems which meet the requirements of the construction industry, by offering readily available support and all the documentation required for building companies that wish to obtain LEED certification for their projects.

Since 2009, GBC Italia has developed a LEED protocol for new builds based on the American model. Numerous countries apply protocols developed by local Green Building Councils based on the American protocol, such as Dubai, Australia, South Africa.

The new LEED V4 protocol will be introduced in October 2016 and is set to be applied all around the world.

Up until the 31st October 2016, it will be possible to register projects for certification and choose whether to adopt the American LEED 3 protocol – known as the 2009 – the Italian protocol or the new, more restrictive LEED V4 version.

There are numerous new aspects with the new protocol.

MAPEI HELPS OBTAIN IMPORTANT CREDITS FOR EACH OF THE PROTOCOLS APPLIED.

How Mapei products help score LEED points

LEED certification is only applied to a complete building project, and not to the single products or services. The products themselves cannot be certified, but they can play their part in obtaining credits for LEED certification. The total number of credits obtained help earn various levels of LEED certification, with the one known as "Platinum" being the highest.

MATERIALS AND RESOURCES:
MR CREDIT 4, CONTENT OF RECYCLED MATERIALS
Constructors can contribute 1 LEED point if the content of recycled

materials accounts for 10% of the total cost of the material, and 2 points if the content of recycled materials accounts for 20% of the total cost of the material. The points are only awarded if the sum of the content of recycled materials in all the materials used in the project account for at least 10% or 20% of the total value. The content of recycled materials may be from pre-consumption (waste during manufacturing, for example) or post-consumption (waste from consumers). If the content of recycled materials is from pre-consumption waste only, only half of this goes towards the credit points.

MATERIALS AND RESOURCES:
MR CREDIT 5, LOCALLY-SOURCED MATERIALS
The materials used may help earn 2 points if extracted and manufactured within a radius of 350 km from the site. The LEED standard promotes the use of locally-sourced materials, in that it reduces the impact of transport on the environment.
MAPEI Italy has 3 production facilities located in strategic positions in the north and southern-central areas and, in many cases, are able to supply products within the set distances.

LOW EMISSION MATERIALS
The Italian protocol, on the other hand, considers a low-emission material all those products which comply with GEV's EC1 or EC1 Plus classification, assessing their VOC emissions and expressing them in µg/m³.

LEED V3

Credits for the American V3 version of the protocol to which Mapei products contribute are always MR4 (Recycled Content), MR5 (regional materials), from within a radius of 500 miles, and products with low emissions. As far as VOC are concerned, all products must comply with SCAQMD Rule 1168, which measures a product's VOC content in g/l. This method, therefore, doesn't distinguish the actual nature of the VOC, but indicates the amount of volatile organic compounds contained in the product.

LEED V4

This new protocol, which as we said previously is more restrictive than the previous versions, also introduces a number of differences in how Mapei can contribute in obtaining credits.

The old MR4 and MR5 Materials & Resources credits have been eliminated: such characteristics in a product are intrinsically included in a new MR credit MR "Building Product Disclosure and Optimization: Environmental Product Declarations". The aim of this credit is to stimulate the use of products with an EPD, thereby encouraging transparent information from the manufacturer.

But what is an EPD? EPD stands for Environmental Product Declaration, an open, clear document verified and certified by an external body that describes the impact a product has on the environment during its entire life cycle, by measuring the impact of the product using standardised LCA (Life Cycle Assessment) methods.

An analysis of the life cycle of a product, therefore, is an evaluation of the environmental impact of the product during all the various phases of its life: from extraction of the raw materials that make up the formula to transport to take the raw materials to the production plant, to the production cycle, to its packaging, to waste materials, to transporting the finished product to the distributor and its final disposal, commonly known as "from cradle to grave".

Numerous environmental impacts are taken into consideration, from the more widely known Global Warming Potential (also known as its Carbon Footprint), which means the emission of greenhouse gases that contribute to global warming, up to impacts such as eutrophication (anomalous growth of aquatic organisms such as alga, which damages aquatic life), the reduction of the ozone layer, the transformation of pollutants into acidic substances (which then cause acid rain), a reduction in the amount of natural resources,...

What Mapei does is to carry out a thorough scientific analysis, using sophisticated software and dedicated databases, of all these environmental impacts during the entire life cycle of a product.
An EPD for the product is then published using the so-called "Program Operator" platform, that is, bodies that certify that such declarations are correct and written according to ISO standards. Mapei uses the EPD International program operator, an internationally renowned Swedish body, and EPD Italy, founded by ICMQ.

Another modification to the new LEED V4 protocol regards low emission materials: it is no longer enough just to evaluate VOC content in g/l, as with the old American protocol; awards go to all those products which, along with this type of assessment, have also been tested in a simulation chamber to measure VOC emissions.
And Mapei, thanks to their numerous years of experience in the Indoor Air sector, is already on board and is able to supply products that fully comply with this type of credit.

MAPEI and Sustainability

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 EC1 PLUS
EMICODE EC1
EMICODE EC1R PLUS
EMICODE EC1R
All MAPEI ECO products are certified and labelled EMICODE EC1 and EMICODE EC1 PLUS "products with very low emission of volatile organic compounds" in compliance with the guidelines issued by GEV (a German body which monitors emissions from construction materials).

GREEN INNOVATION
This logo identifies MAPEI products which, thanks to their various characteristics, help in the design, construction and maintenance of eco-sustainable buildings.

LEED
LEED is a voluntary system for the design, construction and management of high-performance, sustainable buildings. The LEED certification system indicates the requirements for constructing environmentally sustainable buildings in terms of energy and the consumption of natural resources involved in the construction process. The LEED protocol was created in the USA, and is currently applied in more than 100 countries.

Ü MARK - GERMAN DIBt
The U mark label is also obligatory in Germany for all construction materials for flooring, and is based on a material's VOC emissions.

EPD
Mapei was awarded Certiquality certification in 2016 for their EPD (Environmental Product Declaration) issuing process. An EPD describes the environmental impact of a product throughout its entire life cycle by measuring its impact using standardised LCA (Life Cycle Assessment) methods.

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..
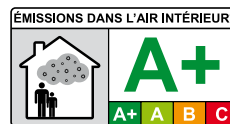
ULTRALITE
Lightweight products.

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.

LOGO SANITAIRE -
Émissions dans l'air intérieur
The sanitaire logo is obligatory in France, and must be applied on all construction products for internal use sold from the 1st of January 2012 (and from 1/9/2013 for products on the market prior to this date). It is similar to the energy efficiency label applied on household appliances, and indicates the class of the product (A+ is the highest and C is the lowest) regarding the emission of volatile organic compounds (VOC). Ref. French Decree n° 2011-321 and successive annexes, with the aim of reducing emissions in buildings to safeguard the quality of indoor air and, as a result, the health of final users.

* 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)

M1 FINLAND
This mark, widely known in Scandinavian countries in particular, is a voluntary label which assesses both the level of VOC emissions and odours from products.

BLAUER ENGEL
Blauer Engel differs from other rating and evaluation systems because it is not divided into different classes, but is rather a single classification: the product either complies or does not comply with Blaue Engel.

Certified carbon footprint (ISO TS 14067). No residual greenhouse gas emissions through certified offsetting.

Mapei, a world of **adhesives**

From Mapei, a wide range of high quality adhesives for installing ceramic tiles, stone and mosaics, suitable for any application, anywhere.

- Technologically advanced systems
- Easy to use
- For walls and floors
- For internal and external use
- Eco-sustainable
- Certified according to the most strict international standards

CERTIFICATIONS

|	CE	EN 12004	GEV EMICODE	Low Dust	Ultralite Technology	Fast Track Ready	CREDITS
NORMAL-SETTING HYDRAULIC BINDER-BASED ADHESIVES *							
ADESILEX P9	EN 12004	C2TE	EC1 R Plus				3
ADESILEX P10	EN 12004	C2TE	EC1 R Plus				3
ADESILEX P10 + ISOLASTIC AL 50%	EN 12004	C2ES1					2
KERABOND	EN 12004	C1	EC1 R Plus				3
KERABOND + ISOLASTIC	EN 12004	C2ES2					2
KERABOND PLUS	EN 12004	C2E	EC1 R Plus				3
KERABOND PLUS + ISOLASTIC	EN 12004	C2ES2					2
KERAFLEX	EN 12004	C2TE	EC1 R Plus				3
KERAFLEX EASY S1	EN 12004	C2ES1	EC1 R Plus				3
KERAFLEX MAXI S1	EN 12004	C2TES1	EC1 R Plus	●			3
KERAFLEX MAXI S1 ZERØ	EN 12004	C2TES1	EC1 R Plus	●			3
KERASET	EN 12004	C1	EC1 R Plus				3
TIXOBOND WHITE	EN 12004	C1TE	EC1 R Plus				3
ULTRALITE S1	EN 12004	C2TES1	EC1 R Plus	●	●		4
ULTRALITE S2	EN 12004	C2ES2	EC1 R Plus		●		4
ULTRALITE FLEX	EN 12004	C2TE	EC1 R Plus	●	●		4
FAST-SETTING HYDRAULIC BINDER-BASED ADHESIVES *							
ADESILEX P4	EN 12004	C2F	EC1 R Plus			●	3
ELASTORAPID	EN 12004	C2FTES2				●	2
GRANIRAPID	EN 12004	C2FS1	EC1 R Plus			●	3
KERAQUICK S1	EN 12004	C2FTS1	EC1 R Plus			●	3
KERAQUICK S1 + LATEX PLUS	EN 12004	C2FTS2					2
ULTRALITE S1 QUICK	EN 12004	C2FTS1			●	●	2
ULTRALITE S2 QUICK	EN 12004	C2FES2	EC1 R Plus		●	●	3
SYNTHETIC RESIN-BASED ADHESIVES *							
ADESILEX P22	EN 12004	D1TE					2
ULTRAMASTIC III	EN 12004	D2TE					2
ULTRAMASTIC 5	EN 12004	D2TE					2
REACTIVE ADHESIVES *							
KERALASTIC	EN 12004	R2					1
KERALASTIC T	EN 12004	R2T					1
KERAPOXY ADHESIVE	EN 12004	R2T					2
ULTRABOND ECO PU 2K	EN 12004	R2T	EC1 R Plus				3

Once you've chosen the most suitable adhesive, complete it by selecting the most appropriate grouts and sealants. For furter information, visit our website *www.mapei.com*.

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

MAPEI

NORMAL-SETTING HYDRAULIC BINDER-BASED ADHESIVES

Adesilex P9
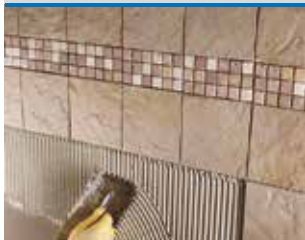
▶ High-performance cementitious adhesive with extended open time, reduced slip, with very low emission level of volatile organic compounds, for ceramic tiles and stone materials.
The white version has very high white balance and excellent workability.

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

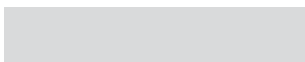▶ High-performance, extended open time, cementitious adhesive for ceramic tiles and stone materials.

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 no residual greenhouse gas emissions through certified offsetting.

Keraset

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

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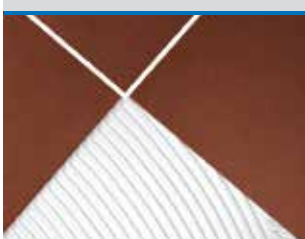
▶ High-performance, ultra-white cementitious adhesive with reduced slip and long open time with very low emission level of volatile organic compounds for ceramic tiles (thickness of adhesive up to 15 mm).

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.

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.

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.

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 S1

▶ High-performance, quick-setting, deformable cementitious adhesive with reduced slip, extended open time with very low emission level of volatile organic compounds for ceramic tiles and stone material stable in the presence of humidity.

Latex Plus

▶ Elasticising latex mixed with KERAQUICK S1. When KERAQUICK 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.

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.

Ultramastic 5

▶ Ready-to-use, high-performance adhesive paste with reduced slip and long open and adjustment time for ceramic tiles. Ideal for absorbent substrates.

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.

ADHESIVES FOR INSTALLING **THIN PORCELAIN TILES** ON **INTERNAL** AND **EXTERNAL SURFACES**(1)

TYPE OF SUBSTRATE	FORMAT	RECOMMENDED ADHESIVES	
		NORMAL SETTING	FAST SETTING
Installation of thin porcelain tiles **WITH** glass fibre strengthening mesh **on internal cementitious screeds or existing ceramic flooring** and **on internal walls**	< 5000 cm² (the longer side must be no more than 100 cm)	KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1	GRANIRAPID ULTRALITE S1 QUICK
	> 5000 cm²	KERABOND PLUS + ISOLASTIC KERABOND + ISOLASTIC ULTRALITE S2	ELASTORAPID ULTRALITE S2 QUICK
Installation of thin porcelain tiles **WITHOUT** glass fibre strengthening mesh **on internal cementitious screeds or existing ceramic flooring** and **on internal walls**	< 5000 cm² (the longer side must be no more than 100 cm)	KERAFLEX ULTRALITE FLEX	KERAQUICK S1
	> 5000 cm²	KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1	ULTRALITE S1 QUICK GRANIRAPID
Installation of thin porcelain tiles **WITH** or **WITHOUT** glass fibre strengthening mesh **on internal cementitious screeds with underfloor heated flooring**	< 5000 cm² (the longer side must be no more than 100 cm)	KERABOND PLUS + ISOLASTIC KERABOND + ISOLASTIC ULTRALITE S2	ELASTORAPID ULTRALITE S1 QUICK
	> 5000 cm²		KERAQUICK S1 + LATEX PLUS ULTRALITE S2 QUICK
Installation of thin porcelain tiles **WITH** glass fibre strengthening mesh **on waterproofed internal surfaces (such as MAPELASTIC, MAPELASTIC TURBO or MAPEGUM WPS)**	< 5000 cm² (the longer side must be no more than 100 cm)	KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1	ELASTORAPID ULTRALITE S1 QUICK
	> 5000 cm²	KERABOND PLUS + ISOLASTIC KERABOND + ISOLASTIC ULTRALITE S2	KERAQUICK S1 + LATEX PLUS ULTRALITE S2 QUICK
Installation of thin porcelain tiles **WITHOUT** glass fibre strengthening mesh **on waterproofed internal surfaces (such as MAPELASTIC, MAPELASTIC TURBO or MAPEGUM WPS)**	< 5000 cm² (the longer side must be no more than 100 cm)	KERAFLEX ULTRALITE FLEX	KERAQUICK S1
	> 5000 cm²	KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1	ULTRALITE S1 QUICK GRANIRAPID
Installation of thin porcelain **WITH** or **WITHOUT** glass fibre strengthening mesh **on work benches, wooden furnishings, marine plywood and metal**	< 5000 cm² (the longer side must be no more than 100 cm)	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS
	> 5000 cm²	KERALASTIC T ULTRABOND ECO PU 2K	
Installation of tiles **WITH** glass fibre strengthening mesh **on façades on cementitious render or reinforced concrete**	< 5000 cm² (the longer side must be no more than 100 cm)	KERABOND + ISOLASTIC ULTRALITE S2	ELASTORAPID ULTRALITE S2 QUICK
	> 5000 cm²	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS
Installation of tiles **WITHOUT** glass fibre strengthening mesh **on façades on cementitious render or reinforced concrete**	< 5000 cm² (the longer side must be no more than 100 cm)	KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1	ELASTORAPID ULTRALITE S1 QUICK
	> 5000 cm²	KERABOND PLUS + ISOLASTIC KERABOND + ISOLASTIC ULTRALITE S2	KERAQUICK S1 + LATEX PLUS ULTRALITE S2 QUICK
MAPETHERM TILE SYSTEM, for installing thin porcelain tiles **on thermal insulation system**	< 5000 cm² (the longer side must be no more than 100 cm)	KERABOND PLUS + ISOLASTIC KERABOND + ISOLASTIC ULTRALITE S2	ELASTORAPID ULTRALITE S2 QUICK KERAQUICK S1 + LATEX PLUS

KEY

EPOXY-POLYURETHANE adhesive

(1) for further infomation, see the Technical Notebook "Systems for installing thin porcelain tiles".

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

FLOOR	CERAMIC TILES AND MOSAICS				
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Porcelain tiles or klinker		Single-fired, double-fired or terracotta
	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING
Cementitious screeds and screeds made from special binders	ADESILEX P10	ULTRALITE S1 QUICK KERAQUICK S1	KERABOND PLUS ADESILEX P9 KERAFLEX ULTRALITE FLEX	GRANIRAPID ULTRALITE S1 QUICK	KERABOND ADESILEX P9 ULTRALITE FLEX
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	KERABOND PLUS ADESILEX P9 KERAFLEX EASY ULTRALITE FLEX
Anhydrite screeds (with PRIMER G or ECO PRIM T)	ADESILEX P10	ULTRALITE S1 QUICK KERAQUICK S1	KERABOND PLUS ADESILEX P9 KERAFLEX ULTRALITE FLEX	GRANIRAPID ULTRALITE S1 QUICK	KERABOND ADESILEX P9 ULTRALITE FLEX
Heated screeds	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	ELASTORAPID ULTRALITE S1 QUICK	KERABOND PLUS ADESILEX P9 ULTRALITE FLEX
Existing ceramic, terrazzo or natural stone floors	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	ELASTORAPID ULTRALITE S1 QUICK	ADESILEX P9 ULTRALITE FLEX
Surfaces waterproofed with MAPELASTIC or MAPEGUM WPS	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	ELASTORAPID ULTRALITE S1 QUICK	ULTRALITE FLEX
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
Chipboard	KERABOND PLUS + ISOLASTIC KERABOND + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID KERAQUICK S1 + LATEX PLUS	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID KERAQUICK S1 + LATEX PLUS	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K
Existing PVC, rubber or linoleum floors	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K
Metal surfaces	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K

KEY

HYDRAULIC BINDER-BASED adhesive

EPOXY-POLYURETHANE adhesive

EPOXY adhesive

FAST SETTING	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
FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	
ULTRALITE S1 QUICK KERAQUICK S1	KERAFLEX ULTRALITE FLEX	ADESILEX P4 KERAQUICK S1 KERAQUICK S1 + LATEX PLUS ULTRALITE S1 QUICK ULTRALITE S2 QUICK GRANIRAPID ELASTORAPID	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK S1 KERAQUICK S1 + LATEX PLUS ULTRALITE S1 QUICK ULTRALITE S2 QUICK GRANIRAPID ELASTORAPID	KERALASTIC KERAPOXY ADHESIVE ULTRABOND ECO PU 2K
ULTRALITE S1 QUICK GRANIRAPID	ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ				
ULTRALITE S1 QUICK KERAQUICK S1	KERAFLEX EASY S1 ULTRALITE FLEX				
ULTRALITE S1 QUICK GRANIRAPID	ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ				
ULTRALITE S1 QUICK GRANIRAPID	ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ				
ELASTORAPID ULTRALITE S1 QUICK	ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ				
ELASTORAPID	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID		KERAQUICK S1 + LATEX PLUS	
ELASTORAPID KERAQUICK S1 + LATEX PLUS	KERABOND PLUS + ISOLASTIC KERALASTIC ULTRABOND ECO PU 2K	ELASTORAPID KERAQUICK S1 + LATEX PLUS		KERAQUICK S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K
KERAQUICK S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS		KERAQUICK S1 + LATEX PLUS	
KERAQUICK S1 + LATEX PLUS	KERALASTIC ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS		KERAQUICK S1 + LATEX PLUS	

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.

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

WALLS	CERAMIC TILES AND MOSAICS				
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Porcelain tiles or klinker		Single-fired, double-fired or terracotta
	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING
Cementitious render or skim coats	ADESILEX P10 ULTRAMASTIC III	ULTRALITE S1 QUICK KERAQUICK S1	ADESILEX P9 KERAFLEX ULTRAMASTIC III ULTRALITE FLEX	ULTRALITE S1 QUICK GRANIRAPID	TIXOBOND WHITE KERABOND ADESILEX P9 ADESILEX P22
Concrete	ADESILEX P10 + ISOLASTIC 50% ULTRAMASTIC III	ULTRALITE S1 QUICK ELASTORAPID	KERAFLEX ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRAMASTIC III ULTRALITE FLEX	ELASTORAPID ULTRALITE S1 QUICK	ADESILEX P9 KERAFLEX ADESILEX P22 ULTRALITE FLEX
Expanded or cellular cement blocks (with PRIMER G or ECO PRIM T)	ADESILEX P10 ULTRAMASTIC 5	ULTRALITE S1 QUICK KERAQUICK S1	ADESILEX P9 KERAFLEX ULTRAMASTIC 5 ULTRALITE FLEX	ULTRALITE S1 QUICK GRANIRAPID	TIXOBOND WHITE KERABOND ADESILEX P9 ULTRAMASTIC 5
Lime-based skim coats or render (with PRIMER G or ECO PRIM T)	ADESILEX P10 ULTRAMASTIC III (*)	ULTRALITE S1 QUICK KERAQUICK S1	ADESILEX P9 KERAFLEX ULTRAMASTIC III (*) ULTRALITE FLEX	GRANIRAPID ULTRALITE S1 QUICK	TIXOBOND WHITE KERABOND ADESILEX P9 ADESILEX P22 (*)
Plasterboard	ADESILEX P10 ULTRAMASTIC III	ULTRALITE S1 QUICK KERAQUICK S1	ADESILEX P9 KERAFLEX ULTRAMASTIC III ULTRALITE FLEX	ULTRALITE S1 QUICK GRANIRAPID	ADESILEX P9 KERAFLEX ADESILEX P22 ULTRALITE FLEX
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 ULTRALITE FLEX	ELASTORAPID ULTRALITE S1 QUICK	ADESILEX P9 KERAFLEX ULTRALITE FLEX
Chipboard	KERABOND + ISOLASTIC KERALASTIC T ULTRABOND ECO PU 2K ULTRAMASTIC III	ELASTORAPID KERAQUICK S1 + LATEX PLUS	KERABOND PLUS + ISOLASTIC KERALASTIC T ULTRABOND ECO PU 2K ULTRAMASTIC III	KERAQUICK S1 + LATEX PLUS ELASTORAPID	KERABOND PLUS + ISOLASTIC KERALASTIC T ULTRABOND ECO PU 2K ULTRAMASTIC III
Cement-fibre panels (with PRIMER G or ECO PRIM T)	ADESILEX P10 ULTRAMASTIC 5	ULTRALITE S1 QUICK KERAQUICK S1	ADESILEX P9 KERAFLEX ULTRAMASTIC 5 ULTRALITE FLEX	ULTRALITE S1 QUICK GRANIRAPID	TIXOBOND WHITE KERABOND ADESILEX P9 ULTRAMASTIC 5
Metal surfaces	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K

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

(*) apply PRIMER G or
ECO PRIM T beforehand

	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
FAST SETTING	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING	
ULTRALITE S1 QUICK KERAQUICK S1	KERAFLEX ULTRALITE FLEX	KERAQUICK S1 ADESILEX P4 KERAQUICK S1 + LATEX PLUS ULTRALITE S1 QUICK ULTRALITE S2 QUICK GRANIRAPID ELASTORAPID	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK S1 KERAQUICK S1 + LATEX PLUS ULTRALITE S1 QUICK ULTRALITE S2 QUICK GRANIRAPID ELASTORAPID	KERALASTIC T KERAPOXY ADHESIVE ULTRABOND ECO PU 2K
ULTRALITE S1 QUICK GRANIRAPID	KERAFLEX KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1 ULTRALITE FLEX				
ULTRALITE S1 QUICK KERAQUICK S1	KERAFLEX ULTRALITE FLEX				
ULTRALITE S1 QUICK KERAQUICK S1	KERAFLEX ULTRALITE FLEX				
ULTRALITE S1 QUICK KERAQUICK S1	KERAFLEX ULTRALITE FLEX				
ULTRALITE S1 QUICK GRANIRAPID	KERAFLEX KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1 ULTRALITE FLEX				
KERAQUICK S1 + LATEX PLUS ELASTORAPID	KERABOND PLUS + ISOLASTIC KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS		KERAQUICK S1 + LATEX PLUS	
ULTRALITE S1 QUICK KERAQUICK S1	KERAFLEX ULTRALITE FLEX	GRANIRAPID ULTRALITE S1 QUICK		ULTRALITE S1 QUICK GRANIRAPID KERAQUICK S1	KERALASTIC T ULTRABOND ECO PU 2K
KERAQUICK S1 + LATEX PLUS	KERALASTIC T ULTRABOND ECO PU 2K	KERAQUICK S1 + LATEX PLUS		KERAQUICK S1 + LATEX PLUS	

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.

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

FLOOR	CERAMIC TILES AND MOSAICS			
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Porcelain tiles, klinker, single-fired, terracotta	
	NORMAL SETTING	FAST SETTING	NORMAL SETTING	FAST SETTING
Cementitious screeds and screeds made from special binders	ADESILEX P10 + ISOLASTIC 50%	ULTRALITE S1 QUICK ELASTORAPID	ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ	GRANIRAPID ULTRALITE S1 QUICK
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
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

WALLS AND FAÇADES	CERAMIC TILES AND MOSAICS			
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Porcelain tiles, klinker, single-fired, terracotta	
	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 S1 + LATEX PLUS ULTRALITE S1 QUICK ULTRALITE S2 QUICK

SWIMMING POOLS, TANKS, etc.	CERAMIC TILES AND MOSAICS			
TYPE OF SUBSTRATE	Glass mosaics or ceramic tiles		Porcelain tiles, klinker, single-fired, terracotta	
	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
Fibreglass	KERAPOXY ADHESIVE	-	KERAPOXY ADHESIVE	-

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

(*) apply PRIMER G or ECO PRIM T beforehand

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	
KERABOND PLUS KERAFLEX EASY S1 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ ULTRALITE S1 ULTRALITE FLEX KERAFLEX EASY S1 ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC KERAFLEX EASY S1 ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	ULTRALITE S1 QUICK GRANIRAPID KERAQUICK S1	KERAPOXY ADHESIVE	ULTRALITE S1 QUICK GRANIRAPID KERAQUICK S1	KERALASTIC T KERAPOXY ADHESIVE ULTRABOND ECO PU 2K

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	
ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	ULTRALITE S2 QUICK GRANIRAPID KERAQUICK S1	KERAPOXY ADHESIVE	ULTRALITE S2 QUICK GRANIRAPID KERAQUICK S1	KERALASTIC T KERAPOXY ADHESIVE ULTRABOND ECO PU 2K

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	
ULTRALITE S1 ULTRALITE S2 KERAFLEX MAXI S1 KERAFLEX MAXI S1 ZERØ KERABOND PLUS + ISOLASTIC	GRANIRAPID ELASTORAPID ULTRALITE S1 QUICK ULTRALITE S2 QUICK	-	-	-
KERAPOXY 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.

Technical documentation

From the technical area menu you can view the technical documentation divided per product lines and type of document.