TILE INSTALLER'S MANUAL

Products for ceramic and natural stone

MAPEI

EVERYTHING INSTALLERS NEED TO HELP CHOOSE THE RIGHT MAPEI PRODUCTS AND USE THEM CORRECTLY WHEN INSTALLING CERAMIC AND STONE.

Tile installer's manual
Products for ceramic tiles and natural stone

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Standard for the installation of **ceramic tiles**

In 2013 a new technical standard was introduced in Italy regarding the **installation of ceramic tiles.**

UNI 11493-1 – Ceramic floor and wall tiling – Design, installation and maintenance instructions, that applies to all internal and external ceramic floor and wall tiling bonded mainly with adhesive but also with cementitious mortar.

UNI 11493-2 – The knowledge, ability and skill set required for layers of ceramic floor and wall tiles – which disciplines the professional figure of ceramic tile layers. It contains methods to assess the ability of tile layers and defines the requirements of organisations that wish to carry out these assessments.

DEFINITION OF THE MAIN ACTORS AND TRACEABILITY

The standard contains methods to assess the ability of tile layers and defines the requirements of organisations that wish to carry out these assessments. A traceability document is included in the standard, consisting of a technical report compiled by the Works Director (or the installer) that is handed over to the client upon consignment of the completed work. This document identifies all those persons that have contributed to the execution of the tiling work.

CLIENT

The client defines the technical and aesthetic specifications and performance requirements of the tiling, and also chooses which tiles are to be used. The client may be the builder, the Works Director, the tile installer or the owner of the property.

TILING DESIGNER

The designer's task is to identify the most appropriate installation solution and dimensions of the tiling, according to the design specifications and the needs of the client.

WORKS DIRECTOR

The Works Director checks the design, ensures work is executed in compliance with design specifications, coordinates all the quality aspects of the materials and analyses and acts upon any feedback received from the installer.

TILE INSTALLER (tiling company)

The installer is responsible for carrying out the work in accordance with the project and the decisions of the Project Manager, verifying the quality of materials, the condition of the substrate, and the storage of materials. The tiler must also take care of the work area and make sure it is protected both during and after installation until it is consigned to the client.

MANUFACTURER OF THE MATERIALS

The manufacturer is responsible for checking that the materials they produce comply with current standards.

RETAILER OF THE MATERIALS

The retailer is responsible for the correct storage of the materials and products until they are delivered, and for communicating any warranties, technical documentation and safety data sheets issued by the manufacturer.

MAIN CONCEPTS COVERED BY THE STANDARD

CHOOSING THE ADHESIVE

The main factors (schematically represented by appendix D in the standard) to consider when choosing the correct adhesive are as follows:

- type and format of the material;
- type and characteristics of the substrate;
- final use;
- work execution restraints and requirements;
- work execution requirements.

MINIMUM REQUIREMENTS OF SUBSTRATES

Whatever the type of substrate, prior to installation it must be well cured, clean, dry and flat and be free of all materials and substances that could potentially affect adhesion of the adhesive or skim coat. The cohesive tensile (pull-off) and adhesion strength of **render** to the underlying load-bearing layer must be at least 1 N/mm² (10 kg/cm²). **Screeds** must have the following compressive strength:

- residential use: ≥ 15-20 N/mm²;
- industrial use: ≥ 30-40 N/mm².

DOUBLE-BUTTERING

The adhesive must be applied using the double-buttering technique **(the adhesive is applied on the back of the tiles as well as on the substrate)** in those cases where full contact of the adhesive with the installation bed must be guaranteed.

PRESCRIPTIONS RELATED TO JOINTS

The definition of and requirements for joints (structural, distribution, expansion, perimeter) and their pitching.

MECHANICAL FASTENER

If the longest side of the tile is more than 30 cm, the designer must evaluate the use of an additional mechanical fastening system for extra security (such as steel hooks fastened to the substrate).

MINIMUM WIDTH OF JOINT

In the design prescriptions, the width of the joints may be ≥ 2-3 mm for rectified tiles in internal environments bonded on rigid, dimensionally stable substrates, or up to 6-8 mm for the opposite conditions. **Butt joints, therefore, are no longer allowed.**

Standard for the installation of **ceramic tiles**

MAIN CONCEPTS COVERED BY THE STANDARD

OPTIONAL CHARACTERISTICS OF CEMENTITIOUS ADHESIVES

As far as cementitious adhesives are concerned, EN 12004 distinguishes between two **main classes**, **C1 and C2, depending on the level of adhesion of the product**, which, in the case of fast-setting adhesives, are followed by the letter F. Apart from the classes mentioned previously, EN 12004 also includes **optional classes**. These are not obligatory as far as CE marking is concerned and are used to identify important characteristics regarding the performance qualities of an adhesive.

These characteristics are as follows:

- **slip resistance (T)**;
- **extended open time (E)**;
- **deformability (S1 or S2)**.

As far as deformability is concerned, UNI 11493-1 considers two installation situations, as mentioned in appendix D, in which an S1 or S2 class cementitious deformable adhesive must be used.
For example, when bonding ceramic tiles inside residential environments, table D.2 of UNI 11493-1 specifies the use of class S1 or S2 deformable adhesive to bond large format tiles, that is, with one side longer than 90 cm, on heated cementitious or anhydrite screeds.

AREA OF USE	Tiles - Water absorption Length of longest side (cm)									
INDOOR RESIDENTIAL FLOORS	AA ≤ 3%					AA ≥ 3%				
	≤ 30	≤ 60	≤ 90	≤ 120	> 120	≤ 30	≤ 60	≤ 90	≤ 120	> 120
Heated cementitious screed	**C2**			**C2S1/S2**		**C2**			**C2S1/S2**	
Sulphate-based screed with heating system	**C2**			**C2S1/S2**		**C2**			**C2S1/S2**	

Example of Table D.2

When installing tiles on façades, on the other hand, as specified in table D.7 of UNI 11493-1, a class S1 or S2 deformable adhesive is specified for tiles with sides longer than 30 cm.

AREA OF USE	Tiles - Water absorption - Length of longest side (cm)				
OUTDOOR WALL OUTDOOR CEILING	AA ≤ 3% and AA > 3%				
	≤ 30	≤ 60	≤ 90	≤ 120	> 120
Site cast concrete	**C2**	**C2 - C2S1/S2**	**C2 - C2S1/S2**	**C2S1/S2**	

Example of Table D.2

UNI 11493-1 also specifies that a **traceability card** must be filled in when work has been completed, in which the tile layer must specify which type and class of adhesive according to EN 12004 standards has been used, including its optional classes.
This type of card is required so that the client has a document to certify the characteristics of the work carried out.
Also, in the case of complaints, this document may be used to verify that all the correct products were used for the work, including the adhesive.

Standard for the installation of **stone material**

The Italian standard that currently provides the guidelines to be followed when choosing materials and for the design, installation and maintenance of stone floor and wall coverings is the following:

UNI 11714-1
Stone floor, wall and ceiling coverings - instructions for the design, installation and maintenance

There is an enormous variability in the type, behaviour and performance characteristics of stone materials. For this reason, the evaluation of the various materials has been standardized by taking into consideration previous experience and by carrying out preliminary tests, mainly to verify some of the typical characteristics of stone material.

PROBLEMS RELATED TO THE INSTALLATION OF STONE MATERIAL

DIMENSIONAL STABILITY AND WARPING

Problem

Certain types of stone material (especially some types of green marble, slate and recomposed polyester) can warp due to the effect of moisture from the **adhesive** or **installation mortar.** A material's tendency to warp is also highly dependent on the shape, size and thickness of the slab.

Solution

By measuring the amount of bending during laboratory tests (UNI 11714-1 standards) it is possible to divide stone materials into three classes according to their sensitivity to water.

DEFORMATION CLASS		
CLASS A materials not prone to warping.	**CLASS B** materials prone to warping.	**CLASS C** material highly prone to warping.
NORMAL-SETTING CEMENTITIOUS ADHESIVES	QUICK-SETTING CEMENTITIOUS ADHESIVES	RESIN-BASED REACTIVE ADHESIVE
Keraflex Keraflex Maxi S1 Zero Kerabond + Isolastic Ultralite S1 Flex Zero Ultralite S2 Flex	Granirapid Elastorapid Keraquick Maxi S1	Ultrabond Eco PU 2K Keralastic/ Keralastic T Kerapoxy Adhesive Ultrabond EP 2K

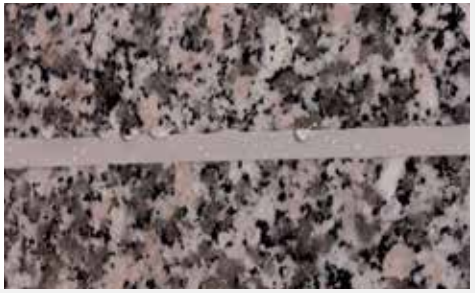
STAINING AROUND ELASTIC JOINTS

Problem

The use of certain types of **sealants** in elastic joints may cause staining of the stone around the joints.

Solution

Use a neutral-hardening silicone sealant such as **Mapesil LM** to prevent staining.



STAINING AND EFFLORESCENCE ON THE SURFACE OF STONE

Problem

Certain types of stone material (particularly marble, granite and light colours recomposed stone) may be stained by the presence of water during installation:

- on a bed of mortar or with a normal-setting adhesive;
- on substrates that are not sufficiently protected against water rising up from the ground by capillary lift (due to the lack of a vapour barrier);
- on screeds that have not been thoroughly cured with a high level of residual moisture.

Solution

- Lay a vapour barrier comprising polythene sheets under the cementitious screed to block the capillary lift of water.
- The render or screed must be dry and thoroughly cured. The render or screed must be dry and thoroughly cured. Installing a rapid-drying screed made from **Topcem**, **Topcem Pronto**, **Mapecem** or **Mapecem Pronto** reduces the waiting time before installing stone.
- Install stone material using **class F rapid-setting adhesive** (according to EN 12004).

Products for
acoustic insulation

Products from the **Mapesilent** and **Mapesonic** lines are soundproofing systems designed to meet the legal requirements of Prime Ministerial Decree 5-12-97 regarding soundproofing measures to combat impact noise Some of these products enable the highest acoustic efficiency classes to be achieved according to UNI 11367.

D.P.C.M. 5/12/97 – a decree pertaining to the passive acoustic requirements of buildings to define the minimum soundproofing performance standards of buildings according to their final use.

Standard UNI 11367 – Acoustics in buildings - Sound classification of single properties – On-site evaluation and verification procedure, describes the procedure to define the sound classification of single properties according to the soundproofing measures implemented. *Informs future users of a property about its acoustic characteristics.*

Under-screed floor soundproofing system (floating screed)

ADVANTAGES

- Efficient method against footstep noise according to current norms and standards DPCM 5-12-97.
- Achieves the highest acoustic performance classification (Class I and II) according to UNI 11367.
- High performance (ΔLw > 30 dB measured on site).
- Quick and easy application.
- Resistant to impact loads and footsteps on site.
- System may be designed using **Mapei Data Mapesilent**.
- Certified system.
- Ideal for new builds.
- Available in 3 different configurations.

PRODUCTS

Mapesilent Roll

Dry system of acoustic insulation in sheets for floating screeds, with **contained thickness (8 mm)**, offering high soundproofing performance and high resistance to tearing and impacts. The sheets are made up of an elastoplastic membrane with polyester reinforcement, coupled with a resilient layer of polyester fiber and covered on the surface by a blue non-woven polypropylene fabric.
Helps obtain credits for environmental certification of buildings according to LEED protocols. Complies with the prescription of CAM Edilizia.

Mapesilent Comfort

Dry system of acoustic insulation for perfectly isolated floating screeds, composed of a high-density closed-cell polyethylene foam pad coupled with a special protective film, with a very contained **thickness (6mm)**, simple and quick to install.
Helps obtain credits for environmental certification of buildings according to LEED protocols. Complies with the prescription of CAM Edilizia.

Mapesilent Panel

Efficient soundproofing system composed of 1000 mm x 1000 mm tiles for floating screeds. Improves thermal insulation and soundproofing capacity of the floor, highly resistant to tears and impact loads, high resistance to footsteps. The tiles are composed of a bitumen and special polymer-based elasto-plastomeric membrane, sandwiched together with a resilient layer of polyester fibre.
Helps obtain credits for environmental certification of buildings according to LEED protocols. Complies with the prescription of CAM Edilizia.

Mapesilent Band R

Closed-cell, expanded polyethylene adhesive band applied to perimeter walls and around the edges of elements which pass through screeds to avoid the formation of acoustic bridges. Designed to be easily applied in a L-shape. The product can be used in combination with all the products from the **Mapesilent** range. Available in two different heights depending on the total thickness of floating screed.

Mapesilent Tape

Adhesive sealing tape made in closed-cell expanded polyethylene, ideal for sealing rolls and panels from the **Mapesilent** range. It prevents the formation of acoustic bridges ensuring the seamlessness of the soundproofing system.

APPLICATION
UNDER-SCREED SOUNDPROOFING SYSTEM

1 Make sure the substrate is at and strong and that there are no rough spots. Pipe and cable chases must be levelled off with material suitable to receive the next layers.

2 Lay out the rolls of **Mapesilent Roll** with the polyester fibre (the lighter-coloured side) towards the screed. Carry out the same procedure with the other rolls, making sure to overlap the entire 5 cm wide border to guarantee continuity of the underlying bre layer. When overlapping the borders, remove the protective film from the back.

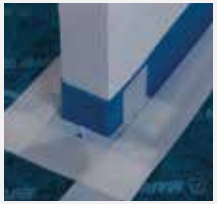
Unroll the sheets of **Mapesilent Comfort** and overlap each roll at least 5 cm to guarantee a continuous soundproofing layer.

Lay the **Mapesilent Panel** tiles with the polyester fibre layer (the light-coloured side) towards the bottom, making sure they are perfectly aligned.

3 Seal all the joints between sheets and tiles with **Mapesilent Tape**, carefully pressed with a rigid roller.

4 The perimeter of the room to be soundproofed must be insulated using **Mapesilent Band R** (closed-cell foam polyethylene adhesive tape applied around the perimeter of walls and elements which pass through the screed, to avoid the formation of acoustic bridges).

5 Seal all the joints between the different elements of **Mapesilent Band R** and **Mapesilent Roll** or **Mapesilent Comfort** or **Mapesilent Panel** with **Mapesilent Tape** adhesive tape.



6 Install a screed thick enough for its final type of use over the perfectly flat soundproofing system. To make the screed, use a special binder or pre-blended mortar from the **Mapei** range. Once the screed is fully cured, bond and grout flooring using products from the **Mapei** range suitable for the type and format of the floor covering.

7 Only trim any excess parts of **Mapesilent Band R** level with the finished floor once it has been installed and grouted.

For further information, please refer to the relevant Technical Data Sheet.

Underfloor soundproofing system

ADVANTAGES

- Efficient method against footstep noise according to current norms and standards DPCM 5-12-97.
- May be applied on old ceramic floors.
- Quick, simple installation.
- Small thickness.
- May be applied under new floor coverings.
- May be applied on heated floors.
- Certified according to current standards.
- With very low emission of volatile organic compounds (EMICODE EC1 Plus).
- Ideal for renovation work.

PRODUCTS

Mapesonic CR

Sound-absorbing, decoupling and anti-fracture membrane made of cork and recomposed rubber bonded with a polyurethane compound. Compact versions (2 or 4 mm thick) are recommended for combatting impact noise on floors and should be applied **directly under the flooring**. Ideal for use in existing buildings where the goal is to improve sound insulation without the need to remove the old flooring and the underlying screed.

Mapesonic Strip

Adhesive strip made of closed-cell expanded polyethylene to be applied around the edge of flooring to prevent the formation of acoustic bridges along the perimeter of the walls. Specific for use with **Mapesonic CR** to ensure the seamlessness of the soundproofing system.

APPLICATION
UNDERFLOOR SOUNDPROOFING SYSTEM

1 Make sure that the substrate is flat, mechanically strong and clean. To even out laying surfaces, please refer to the various ranges of **Mapei** smoothing and levelling compounds products.

2 Before removing the protective plastic backing sheet, apply **Mapesonic Strip** adhesive tape around the perimeter of the room and around pillars and all other abutments.

3 Unroll the sheets of **Mapesonic CR** in the direction of the longest side of the room, placing them next to each other. Use **Ultrabond Eco S955 1K**, **Ultrabond P902 2K** or **Ultrabond Eco P909 2K** on non-absorbent substrates, such as ceramic tiles. **Ultrabond Eco V4 SP** must be used on absorbent substrates, such as screeds and smoothing and levelling compounds.

Massage the surface with a rigid roller or flat trowel, starting from the centre and working towards the edge

4 After applying and grouting the new floor finish, cut off the excess part of the **Mapesonic Strip**.

For further information, please refer to the relevant Technical Data Sheet.

Products for **creating** and **preparing substrates**

Before installing flooring, **a suitable substrate should be applied**, or **the sublayer** should be checked and, where required, prepared accordingly so it is suitable to receive the flooring. UNI 11493-1 and UNI 11714-1 indicate the minimum requirements for substrates. Whatever the type of flooring being installed, substrates must be intact, have sufficient mechanical properties for the flooring, cured, clean, dry, flat and free of any material or substance that could affect adhesion of the adhesive or smoothing compound.

Hydraulic binders for cementitious screeds

ADVANTAGES

- Considerably reduces curing and drying times of screeds compared with traditional sand/cement screeds, which usually require 7-10 days curing per cm of thickness.
- Create distribution joints with a larger pitch to reduce the number of expansion joints required in the screed.
- Develops high mechanical properties within several hours of installing the screed.

PRODUCTS

Topcem

Special hydraulic binder for **normal setting**, **fast drying** and controlled shrinkage screeds
Waiting time before application of the covering:
- 24 hours for ceramics;
- 48 hours for natural stone.

Mapecem

Special **quick-setting and drying** controlled shrinkage hydraulic binder for screeds.
Waiting time before application of the covering:
- 3 hours for ceramic tiles and natural stone.

Pre-blended mortars for cementitious screeds

ADVANTAGES

- Overcomes the problem of sourcing, storing and the quality of raw materials (aggregates, binders, etc.), particularly when carrying out renovation work in old town centres.
- Take note beforehand of the final mechanical characteristics required for the screed.
- Guarantees lower drying and curing times whatever type of aggregate used.
- Prevents dosage and mixing errors often caused by inexperienced workers.

PRODUCTS

Topcem Pronto

Ready-to-use, **normal-setting**, controlled shrinkage mortar with high thermal efficiency for quick-drying screeds. Ideal for heated screeds and other floor coverings
Waiting time before application of the covering:
- 24 hours for ceramics;
- 48 hours for natural stone.

Mapecem Pronto

Pre-blended, ready-to-use, **quick-setting and drying** (24 hours), controlled-shrinkage mortar for screeds
Waiting time before application of the covering:
- 3 hours for ceramic tiles and natural stone.

APPLICATION
HYDRAULIC BINDERS AND READY-MIXED MORTARS

1 All types of substrates are suitable for installing screeds made using **Topcem**, **Topcem Pronto**, **Mapecem** or **Mapecem Pronto**. In case of rising damp, lay an efficient vapour barrier. In the case of screeds which are not self-bearing, so which need to be anchored (10 to 35 mm thick), the substrate must be dry, have no cracks, have sufficient compressive and tensile strength and be free of all dust, crumbling areas, paint, wax, oil and traces of gypsum.

2 The mix may be prepared with a paddle mixer, drum mixer, forced action mixer and an automatic pressure pump. Prepare the mix using 1 bag of 25 kg of **Mapecem Pronto** with 2.1-2.3 l of water and 1 bag of 25 kg of **Topcem Pronto** with 1.7 l of water. The amount of water must not be modified, otherwise the final performance characteristics will be compromised. As an alternative, prepare the mortar by mixing **Mapecem** or **Topcem** with **Gravel 0-8** consisting of a mix of 0 to 8 mm aggregates and sufficient water to form a composition suitable for tamping (see the recommended dosage rates on the datasheet). The mix should have a "damp earth" consistency and must be spread, tamped and levelled in order to get a closed and smooth surface without water bleed.

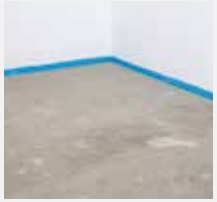
3 The mix must be placed over an isolating layer consisting of sheets of polythene or similar material to create a slip layer between the screed and old substrate. In case of rising damp, the aforementioned uncoupling layer must be formed using a sufficiently waterproof membrane to form an efficient vapour barrier. Place a layer of polystyrene or compressible material at least 0.5 mm thick along the link points (perimeter walls, pillars, etc.) between the screed and the structure. Position insulating or soundproofing material or panels for underfloor heating where required.

4 The mix must be spread, tamped and levelled in the shortest possible time (not more than an hour after preparation with **Topcem** or **Topcem Pronto**, not more than 30 mins with **Mapecem** or **Mapecem Pronto**). The laying of screeds made by **Topcem** or **Topcem Pronto**, **Mapecem** or **Mapecem Pronto** is carried out using the same technique as for cementitious screeds so prepare a series of level guides, spread the mix and tamp thoroughly before finishing off with a float, to obtain a better surface finish. Isolating and floating screeds must be at least 3.5 cm thick. In the case of heated screeds, the thickness over the pipework for the heating system must be at least 3 cm.

5 Place the electro-welded mesh at the mid-point of the screed and include **Mapefibre ST 30** structural fibres when the mechanical properties need to be improved to withstand the risk of cracking (commercial environments, heated screeds, the presence of compressible material, substrates of a different nature, etc.). The areas of the screed which have pipe work running through them must be reinforced by positioning light, metallic reinforcement (e.g., electro-welded hexagonal mesh).

6 Create distribution joints to divide the screed into pitch areas of up to 25 m² in the case of internal screeds and 16 m² for external screeds. Respect the position of structural joints in the load-bearing layer. If installation is interrupted at a point that does not correspond to the position of a joint, insert 20-30 cm x 3-6 mm diameter steel dolly bars at a pitch of 20-30 cm perpendicular to the floor to guarantee a perfect bond with the second pour and to prevent the formation of cracks and steps.

7 Before installing flooring material or ceramic tiles, or before applying a levelling layer, respect the drying and curing times, which vary according to the type of material used to create the screed.



8 For bonded screeds (when it is not possible to create an isolated screed at least 35 mm thick) bonding slurry containing **Planicrete** must be applied beforehand on the clean sublayer (bonding slurry made by mixing 3 parts in weight of **Topcem** or 2 parts in weight of **Mapecem**, 1 part **Planicrete** and 1 part water). If the floor is subjected to high mechanical stresses, the construction joint must be made with **Eporip**. Spread on the mix using the same method described above.

For further information, please refer to the relevant Technical Data Sheet.

Self-levelling system for interiors

ADVANTAGES

- Highly fluid and easily workable mortar, with perfect self-levelling capacity, and high adhesion to the substrate and ultra-rapid drying.
- Thanks to its high fluid and remarkable self-levelling properties, the product immediately loses small imperfections (trowel marks, etc.).

PRODUCTS

Ultraplan Contract

Self-levelling, quick-hardening smoothing compound for thicknesses from 1 to 10 mm per coat.
Waiting time before application of the covering:
- 3 hours for ceramics.

Novoplan Maxi

Rapid-hardening, fibre-reinforced, free-flowing cementitious levelling mortar with high thermal efficiency applied in layers from 3 to 40 mm thick, **specifically designed for underfloor heating/cooling systems**.
Waiting time before application of the covering:
- 12-24 hours for ceramic and natural stone flooring not sensitive to damp;
- 4 days prior to switching the heating system on for the first time.

APPLICATION
SELF-LEVELLING SYSTEM FOR INTERIORS

1 Substrates must be sound and free of all traces of dust, loose or detached parts, varnish, wax, oil, rust and gypsum. Where cracks are present, sealing must be carried out by pouring **Eporip**. If necessary, use **Prosfas** primer or **Primer MF** to consolidate cementitious surfaces, **Primer G** or **Eco Prim T Plus** for dusty or highly porous concrete surfaces and anhydrite screeds and **Eco Prim Grip Plus** on smooth surfaces with low porosity, such as old ceramic floors.

2 Prepare the mix by blending the powdered product with the correct amount of water (as indicated in the data sheet) using a paddle mixer at low speed or a cement mixer to form an even self-levelling paste with no lumps.

3 Spread the mix in an even layer (1 to 10 mm thick for **Ultraplan Contract** and 3 to 40 mm thick for **Novoplan Maxi**) with a large metal trowel or rake. It can also be applied with an automatic pressure pump for renders.

For further information, please refer to the relevant Technical Data Sheet.

Thixotropic smoothing compounds

ADVANTAGES

- Easy to apply, including on vertical surfaces.
- Quick setting products available.
- Application in different thicknesses.

PRODUCTS

Planitop Fast 330

Quick-setting, **fibre-reinforced** cementitious levelling mortar for internal and external floors and walls, applied in layers from 3 to 30 mm to even out irregularities.
Waiting time before application of the covering:
- 4 hours for ceramics;
- 24 hours for waterproofing layers.

Adesilex P4

Rapid-setting smoothing compound for interiors and exteriors floor installation, applied in layers from 3 to 20 mm.
Waiting time before application of the covering:
- 4 hours for ceramics.

Nivorapid

Quick-drying, thixotropic cementitious smoothing compound, for thicknesses from 1 to 20 mm, even for vertical surfaces and for indoor environments.
Waiting time before application of the covering:
- 4 hours for ceramics.

Nivoplan

Smoothing mortar for walls and ceilings in interior and exterior for thicknesses from 2 to 20 mm.
Waiting time before application of the covering:
- 24 hours for ceramics.

Latex Plus

Latex admixture for **Nivorapid** to obtain a levelling compound for sheet metal, wood plank, rubber, linoleum, etc.

Planicrete

Synthetic rubber latex to improve adhesion and performances of cement mixes and prepare bonding slurries for screeds.

APPLICATION
THIXOTROPIC SMOOTHING COMPOUNDS

1 Substrates must be sound and free of all traces of dust, loose or detached parts, varnish, wax, oil, rust and gypsum. If necessary, use **Primer G** or **Eco Prim T Plus** for dusty or highly porous concrete surfaces and anhydrite screeds or gypsum substrates and **Eco Prim T Plus** or **Eco Prim Grip Plus** on smooth surfaces with low porosity, such as old ceramic floors. Particularly absorbent substrates (bricks, breezeblocks, etc.) and surfaces exposed to direct sunlight or wind must be wetted before applying the product.

2 Prepare the mix by blending the powdered product with the correct amount of water (as indicated in the data sheet) using a paddle mixer at low speed or a cement mixer to form an even self-levelling paste with no lumps.

3 **Planitop Fast 330 - Nivoplan**: on walls, apply a feather edge layer on the sublayer to create a perfectly buttered substrate and then immediately apply another layer to level and even out the substrate (up to the maximum thickness allowed per application). Apply by spray with a rendering machine (**Nivoplan** only), trowel or smooth spreader, or a straight edge in the case of particularly thick layers, pressing down firmly on the product so that the mix adheres firmly to the substrate, then float-finish the surface. Apply the mix on floors with a long metal spreader or trowel.

Adesilex P4 - Nivorapid: apply the mix with a long, metal spreader. If necessary, several layers may be applied one after the other in rapid succession.

4 Waiting times before installing the final dressing vary according to the surrounding temperature, level of humidity and absorbency of the sublayer.

For further information, please refer to the relevant Technical Data Sheet.

Primers and adhesion promoters

ADVANTAGES

- Treat surfaces made of gypsum.
- Improve adhesion on dusty and/or porous substrates.
- Improve adhesion on absorbent or flat, non-absorbent substrates.
- Reduce moisture content and consolidate cementitious substrates.

PRODUCTS

Eco Prim T Plus

Universal, **low-odour**, with a very low emission of volatile organic compounds, acrylic primer in water dispersion, **for all absorbent and non-absorbent substrates**.

Primer G

Synthetic resin-based water-dispersion primer with very low content of volatile organic compound (VOC).

Eco Prim Grip Plus

Multi-purpose, **ready-to-use**, **low odour**, **bonding promoter** primer with a very low emission of volatile organic compounds (VOC) for render, smoothing and levelling compounds and cementitious adhesives, for internal and external application.

Primer MF

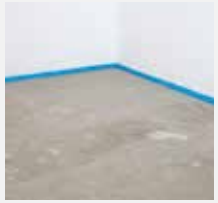
Two-component, solvent-free epoxy primer **for consolidating and waterproofing** cementitious substrates.

APPLICATION
PRIMERS AND ADHESION PROMOTERS

1 Check the substrates, that must be cured, uniformly dry, sound, not subject to shrink, clean, free of dust, loose parts, cracks, paint, wax, oil, rust, or other products that may affect bonding.

If the gypsum-based surface is particularly smooth and shiny, it is recommended to sand beforehand and apply **Primer G**.

Roughen the surface of cementitious sublayers and particularly compact concrete before applying **Primer MF**.



2 According to the type of primer, apply with a roller, brush or trowel and dilute as and when indicated in the relative data sheet. Spread the product evenly over the surface.

3 After leaving it to dry, apply the layer of smoothing compound, adhesive or render, according to the type of primer. In the case of **Primer MF**, broadcast the surface with quartz sand prior to installation with suitable cementitious adhesive.

For further information, please refer to the relevant Technical Data Sheet.

Products for **waterproofing**

Balconies, terraces, bathrooms, swimming pools and damp environments in general are all areas in which a **waterproofer needs to be applied to protect the substrate** and to prevent its gradual deterioration and the formation of unsightly efflorescence or detachment of the floor or wall covering.
Mapei Group have always been committed to research and development of innovative, durable and certified solutions.

Waterproofing products for balconies, terraces, tanks and swimming pools

ADVANTAGES

- Complete and guaranteed waterproofing systems.
- Excellent adhesion to new or existing surfaces.
- High elasticity, even at low temperatures.
- May also be applied on existing coverings before installing ceramic tiles.

WATERPROOFING PRODUCTS

Mapelastic Zero

Mapelastic Zero two-component cementitious mortar, elastic behaviour down to -20°C, for waterproofing balconies, terraces, swimming pools and damp environments in general, CO_2 emissions fully offset for its entire life cycle.

*CO_2 emissions measured throughout the life cycle of **Mapelastic Zero** in 2023 using LCA methodology, verified and certified by its relative EPD, are offset through the acquisition of certified carbon credits in support of renewable energy and forestry protection projects.*

Mapelastic Smart

Two-component, high-flexibility cementitious mortar (with crack-bridging > 2 mm), applied by trowel or with a roller, for waterproofing balconies, terraces, bathrooms and swimming pools.

Mapelastic Turbo

Two-component rapid-drying elastic cementitious mortar for waterproofing terraces and balconies, including at low temperatures and on substrates not completely dry.

Monolastic

One-component elastic cementitious waterproofer with offset CO_2 emissions for its entire lifecycle.

*CO_2 emissions measured throughout the life cycle of **Monolastic** in 2023 using LCA methodology, verified and certified by its relative EPD, are offset through the acquisition of certified carbon credits in support of renewable energy and forestry protection projects.*

WATERPROOFING SYSTEMS ANCILLARY PRODUCTS

Mapetex Sel N

Non-woven polypropylene fabric for reinforcing waterproofing membranes.

Mapenet 150

Alkali-resistant (according to ETAG 004 test) fibre glass mesh used to reinforce waterproof protection layers, antifracture membranes and cementitious smoothing and levelling layers.

Mapeband Easy

Rubber tape sandwiched between two layers of non-woven fabric to form elastic joints in waterproofing systems.

Mapeband TPE

TPE tape for flexible sealing and waterproofing of expansion joints and cracks subject to movement.

Mapeband

Rubber tape with alkali-resistant fabric for cementitious waterproofing systems and liquid membranes.

Mapeband SA

Self-adhesive butyl tape with alkali-resistant, non-woven fabric backing for elastic waterproofing systems.

Drain Vertical/Drain Lateral

Kit for installing floor drains, ideal for draining off water from terraces, balconies, bathrooms, boiler rooms, washrooms, etc.

Drain Front

TPE angular pipe union for terraces and balconies.

APPLICATION
WATERPROOFING PRODUCTS FOR BALCONIES, TERRACES, TANKS AND SWIMMING POOLS

1 Accurately verify the substrates' conditions. Where cracks are present, sealing must be carried out by pouring **Eporip** and subsequently broadcast with quartz sand. Level off the surfaces and restore slopes using **Adesilex P4** or **Planitop Fast 330.**

2 In distribution joints and perimeter joints in correspondence with floor/wall fillets apply **Mapeband** or **Mapeband Easy** and relative special pieces bonded to the substrate with the chosen waterproofing product. Joints between pieces of **Mapeband** must be bonded with **Adesilex LP** while for **Mapeband Easy** use the chosen waterproofing product.

3 For structural joints use **Mapeband TPE** bonded to the substrate with **Adesilex PG4** and subsequent broadcast of quartz sand. The edges must be joined using **Adesilex LP** or through heat-welding.

4 For the realisation of floor or parapet drains use accessories from the **Drain** range. To bond **Drain Vertical/Drain Lateral** to the substrate use the chosen waterproofing product. To bond **Drain Front** use **Adesilex PG4** broadcast with quartz sand.

5 Waterproof the area by applying a first coat of **Mapelastic Zero**, **Mapelastic Smart**, **Mapelastic Turbo** or **Monolastic** with **Mapenet 150** or **Mapetex Sel N** over the waterproofing product (recommended for **Mapelastic Turbo** and **Mapelastic Smart** only).

Once the first coat is dry, apply the second coat of **Mapelastic Zero**, **Mapelastic Smart** or **Mapelastic Turbo** or **Monolastic** with the smooth edge of the trowel to form a layer with a final thickness of at least 2 mm.

6 Once the waterproofing product is fully cured install the ceramic or stone tiles dressing with suitable adhesive.

For further information, please refer to the relevant Technical Data Sheet.

Waterproofing products for bathrooms, SPAs and wet environments

ADVANTAGES

- Products are ready to use.
- Quick application.
- Dries quickly.
- Excellent adhesion to any types of substrates.
- No reinforcement required.
- High crack-bridging performances.

WATERPROOFING PRODUCTS

Mapelastic AquaDefense

Ready-to-use, **ultra quick-drying, flexible liquid membrane** for waterproofing internal and external surfaces.

Mapegum WPS

Quick-drying, flexible **liquid membrane** for waterproofing internal surfaces.

WATERPROOFING SYSTEMS ANCILLARY PRODUCTS

Mapeband PE 120

PVC tape for waterproofing systems created using liquid membranes.

Mapeband SA

Self-adhesive butyl tape with alkali-resistant, non-woven fabric backing for elastic waterproofing systems.

Drain Vertical/Drain Lateral

Kit for installing floor drains, ideal for draining off water from terraces, balconies, bathrooms, boiler rooms, washrooms, etc.

APPLICATION
WATERPROOFING PRODUCTS FOR BATHROOMS, SPA AND WET ENVIRONMENTS

1 Accurately verify the substrates' conditions. Where cracks are present, sealing must be carried out by pouring **Eporip** and subsequently broadcast with quartz sand If necessary, even out the surface with **Planitop Fast 330**.

2 Apply **Mapeband PE 120** and **Mapeband SA** and relative special pieces in correspondence with fillets and features.

3 To create floor drains, use accessory items from the **Drain Vertical/Lateral** range applied using **Mapelastic AquaDefense** or **Mapegum WPS**.

4 Proceed with waterproofing the substrates. **Mapelastic AquaDefense** and **Mapegum WPS** are ready to use products. Apply with a roller, brush or trowel in two thin, even coats (approx. 0.4 mm per coat). Wait until the first coat is dry before applying the second coat crossways to the first coat. The final thickness of the two coats must be at least 0.8 mm.

5 Once the waterproofing product is fully cured install the ceramic or stone tiles dressing with suitable adhesive.

For further information, please refer to the relevant Technical Data Sheet.

Complementary products for installation work

Mapei has developed a new line of complementary products for installation work, designed to meet the numerous needs of installers.
Professional accessories for installing ceramic and stone coverings, anti-fracture, uncoupling and waterproofing membranes, levelling systems and tile spacers: cutting-edge quality systems that help maintain certain, fast and guaranteed results over the years.

Systems for showers and lightweight constructions

ADVANTAGES

- Versatile.
- Lightweight and resistant.
- Easy to handle.
- High mechanical strength.
- Waterproof.
- Easy to cut and install.
- Good insulating properties.
- Perfectly flat, waterproofed walls.
- Special layout created to facilitate cutting or apply specific indications.
- Rapid installation and work times.
- Immediate curing of the product.
- No dust on site.
- Lightweight.
- Complete product range system.

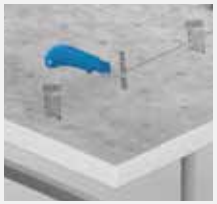
PRODUCTS

Mapeguard Board

Multipurpose, **waterproof**, and **lightweight panel, to be used as a support for the installation of all types of ceramic or stone materials**. Used internally for levelling walls, even as an alternative to cementitious render, and for creating room partitions and furnishing elements such as shelves, bathroom furniture, benches, niches and shower cabins. **Mapeguard Board** is made from an inner layer of high-density extruded polystyrene, with a multi-layered waterproof membrane to each side, and is available in different thicknesses.

APPLICATION

1 After choosing the panel thickness according to the type of application or use, cut the panel to the size required with a standard cutter. Holes and openings for pipes may be created using a drill with a hole-saw bit or with an appropriate saw.



2 When applying to walls as an alternative to plaster, the panels may be bonded directly to the substrate using a **Mapei** cementitious adhesive, class C2 according to Euronorm EN 12004. A solid layer of adhesive to the back of the board is normally recommended. However, depending on specific site requirements, the adhesive may also be applied in beads and spots as long as sufficient coverage of the contact area on the back of the panel is guaranteed. **Mapeguard Board** is also suitable for use with wall plugs if applied to substrates that are not load-bearing.

3 Assembly of the panels used to create walls for shower cabins and furnishing elements may be carried out using a hybrid sealant, such as **Mapeflex MS45**, and mechanical fasteners.

4 **Mapeguard Board** has a waterproof surface: to guarantee the waterproofing of the wall or assembled element, it is sufficient to seal the joints between each single panel with **Mapeguard ST** tape and all the critical areas (corners, edges, through elements) with the special accessory items from the **Mapeguard** system (**Mapeguard IC**, **Mapeguard EC**, **Mapeguard DH-R/Mapeguard DH-L**, **Mapeguard PC**). **Mapeguard** accessory items can be applied using **Mapeguard WP Adhesive.**

5 The surface of the panels assembled as described above, which is resistant to water and perfectly flat, can then be finished with any type of ceramic tile, mosaic or stone material suitable for the specific area of use, using a **Mapei** cementitious adhesive of at least class C2. In accordance with the European standard EN 12004.

For further information, please refer to the relevant Technical Data Sheet.

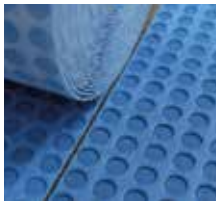
Anti-fracture, uncoupling and waterproofing membranes

		MAPEGUARD UM 35	MAPEGUARD WP 200	MAPETEX SYSTEM
SOLUTIONS	Waterproofing	✓	✓	
	Anti-fracture	✓	✓	✓
	Uncoupling	✓		
	Acoustic			
APPLICATIONS	Internal areas	✓	✓	✓
	External areas	✓		
	Wall		✓	✓
	Floor	✓	✓	✓
	Damp environments	✓	✓	
	Balconies and terraces	✓		
	Heated floors	✓	✓	✓

PRODUCTS

Mapei membranes are a simple, rapid solution to overcome problems in substrates and to meet various other needs, such as how to deal with distribution and expansion joints, cracks in substrates, waterproofing and foot traffic insulation issues.

Mapeguard UM35



Uncoupling, **anti-fracture** and **waterproofing** membrane for cracked and damp substrates and substrates that are not fully cured. Ideal for installing ceramic and stone flooring on internal and external substrates without having to copy the layout of distribution joints in the substrate. Made from a layer of honeycomb HDPE with a rough surface and polypropylene fabric backing.

ADVANTAGES

- Anti-fracture properties for installation on cracked substrates.
- Application with no need to follow the existing joints.
- For substrates that are damp and/or not completely cured.
- Waterproofing.
- Even heat distribution (in case of application on heating floors).
- Mechanical strength.
- The special shape of the embosses offers a perfect mechanical bonding of the adhesive in order to obtain a high adhesion between the ceramic or stone covering and the membrane.
- Semi-transparent: allows to verify the correct distribution of the adhesive and the presence of through-elements.

APPLICATION OF MAPEGUARD UM35

1. Apply the membrane using a minimum class C2 **Mapei** adhesive according to EN 12004 and then press it with a **Mapeguard Roller** or float.
2. Lay the ceramic or stone flooring using a minimum class C2 **Mapei** adhesive according to EN 12004, to be selected according to the tiles format and the designed use.
3. In applied as a waterproofing membrane, use in combination with **Mapeband Easy** and the ancillary products from the **Drain** range.

Mapeguard WP200

Waterproofing, anti-fracture, alkali resistant membrane made from a flexible, thin-layer, waterproof isolating sheet of polyethylene, coated on both sides with a non-woven fabric. For internal use; suitable for overlaying with ceramic, natural stone and LVT coverings.

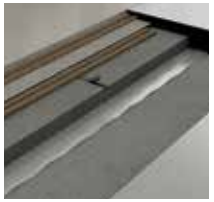
ADVANTAGES

- Waterproofing membrane.
- Membrane with anti-fracture properties.
- Quick and easy to apply.
- Non-woven fabric guarantees perfect adhesion between the membrane and substrate and between the membrane and dressing material.

APPLICATION OF MAPEGUARD WP 200

1. In case of ceramic or stone material, lay the membrane using a minimum class C2 **Mapei** adhesive according to EN 12004 or, in case of LVT, **Mapeguard WP Adhesive**. Then press thoroughly.
2. Use in combination with **Mapeguard ST**, **Mapeguard IC/EC**, **Mapeguard DH-R/Mapeguard DH-L** and **Mapeguard PC** for a complete waterproofing.
3. Lay the ceramic or stone flooring using a minimum class C2 **Mapei** adhesive according to EN 12004, to be selected according to the tiles format and the designed use; in case of LVT, please refer to the relevant System Data Sheet.

Mapetex System



Anti-fracture, high-strength membrane in non-woven synthetic fabric, for installing ceramic tiles and stone material. Prevents cracks in the substrate, where present, from spreading into the new dressing material to preserve its integrity.

ADVANTAGES

- Membrane with anti-fracture properties.
- For application on substrate with cracks or not completely cured.
- Application without following the existing joints.
- High mechanical strength thanks to the particular characteristics of the fibres.
- Suitable for the realisation of removable ceramic floors.

APPLICATION OF MAPETEX SYSTEM

1. Bond the membrane to the cementitious substrate using a **Mapei** C1, S1 or S2 class adhesive according to EN 12004 and press thoroughly.
2. Lay the ceramic or stone flooring using a minimum class C2S1 **Mapei** adhesive according to EN 12004 to be selected according to the tiles format and the designed use.
3. To be used in combination with **Mapetex Strip** when the realisation of a removable ceramic floor is required, by protecting the substrates and enable a quick removal and replacement of the tiles.

Levelling systems and tile spacers

PRODUCTS

When installing ceramic tiles and stone, particularly large format tiles, specific precautions need to be taken in order to achieve perfect, long-lasting results and avoid possible problems after the installation. The use of spacers and levellers, for example, to prevent lippage between tiles, is very important in order to create uniform and perfectly flat tiling on floors and walls. **Mapei** leveling systems are characterised by their ease of installation: they can be quickly applied manually or with the help of specific additional tools, making the laying of tiles simpler, faster, and more accurate.

MapeLevel ProWDG System

Wedge levelling system applied using special pliers for ceramic and stone floor and wall coverings.
- For tiles from 3 to 20 mm thick (with two disposable elements).
- Particularly recommended for installing large format floor and wall tiles or dissimilar materials on disjointed substrates.

ADVANTAGES

- Application of the wedge using **MapeLevel EasyWDG Pushing-Pliers**.
- Quick and simple adjustment.
- Special indentations and rib: the wedge is easier to insert in the base and can be regulated more precisely.
- Simple and accurate removal (breaks off perfectly at the base).
- Reusable wedge.
- Complete range of coloured spacers in 2 versions, to be selected according to the thickness of the tiles. Available in various sizes according to the width of the grout line to help installers choose the right spacer and to create straight, even grout lines.
- Spacers available for tiles up to 20 mm thick.

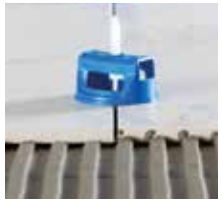
MapeLevel EasyWDG System

Wedge levelling system for ceramic tiles and stone slabs on floors and on walls.
- For **levelling tiles with thickness from 3 to 12 mm.**
- Particularly suitable when laying large-format tiles.

ADVANTAGES

- Manual application, no plier required.
- Ergonomic shaped wedges, easier to insert.
- Special knurled surface: the wedge is easier to insert in the base and can be regulated more precisely.
- Quick and accurate removal (the spacer clips are designed to break off perfectly).
- Reusable wedge.
- Complete range of coloured spacers in 7 thicknesses to help installers choose the right size.

MapeLevel Easy



Screw levelling system for ceramic and stone material floors and coverings.
- For **levelling tiles with thickness from 3 to 21 mm**.
- Particularly suitable when laying large-format tiles.

ADVANTAGES

- Adjustment is quicker thanks to the special helicoid thread on the self-threading screws.
- Simple and quick manual application without having to use other tools (both installation and removal).
- Quick and precise removal (the bases break off perfectly and unscrews more quickly from the cap).
- Open-view cap design with wide lateral openings, allows to check for accurate tile levelling.
- Complete range of spacers, available in 3 versions and 5 thicknesses to suit all installation needs.
- Reusable cap.
- Optional anti-scratch accessory to protect the surface of tiles.

MapeLevel EasyClick

Screw levelling system with click system for **quick insertion** and **screw removal**, for ceramic and stone floor and wall tiling.
- For **levelling tiles with thickness from 3 to 21 mm**.
- Particularly suitable when laying large-format tiles.

ADVANTAGES

- Quick insertion: may be inserted without threading by pressing the tabs on the cap.
- Quicker removal: automatic expulsion of the thread with a simple click.
- Simple and accurate adjustment: just a small final turn is sufficient to level off tiling with less effort.
- Anti-scratch shield included.
- Simple and quick manual application without having to use other tools (both installation and removal).
- Open-view cap design with wide lateral openings, allows to check for accurate tile levelling.
- Complete range of spacers, available in 3 versions and 5 thicknesses to suit all installation needs.
- Quick and accurate removal (the spacer clips are designed to break off perfectly).
- Reusable cap.

MapeLevel Easy T

Reusable self-levelling system for carrying out adjustments when installing ceramic and stone floor and wall coverings.
- For **tiles up to 17 mm thick**.
- For grout lines from 1.5 to 6 mm wide (suitable for 1.5 mm wide grout lines only if used as a stand-alone levelling element).

ADVANTAGES

- Easy to apply.
- Accurate adjustment.
- Fully reusable system.
- Used to correct lippage between tiles during installation.
- Products from the **Zero Line** with fully offset CO_2 emissions.

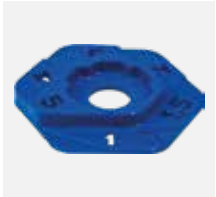
Mapei Tile Spacer

Tile spacers for ceramic and stone tiles.
- Can be used on floors and walls.
- Available in different formats (X-shaped spacers for straight patterns T-shaped spacers for running/staggered patterns; Y-shaped spacers for hexagonal tiles, wedge spacers to rectify and level-off small lippage when installing tiles) and 10 different thicknesses (from 1 to 10 mm) in order to suit any type of tiles and different installation patterns.

ADVANTAGES

- Complete range: available in various thicknesses and shapes to suit any installation pattern and various tile formats.
- Made from regenerated plastic.

Mapei Tile Spacer 7-in-1



7 spacers in one single element for ceramic and stone floor and wall tiles.
- One single spacer with 7 different thicknesses to space **tiles from 0.5 to 5 mm** with one single accessory.
- By placing the spacer in the position required it is possible to form grout lines 0.5 – 1 – 1.5 – 2 – 3 – 4 - 5 mm wide.

ADVANTAGES

- Multipurpose and multifunctional.
- One single accessory for 7 different thicknesses / 7 spacers in one singe element.
- Fully reusable.

APPLICATION OF LEVELLING SYSTEMS

1 Pre installation check

Before installing the levelling system, check the system is suitable for the chosen tile finish. Make sure the tile surface is perfectly clean and free from glue or abrasives residues.

2 Setting spacers

Spread adhesive on the substrate, place the spacers underneath the already laid tile. Select the number and type of spacers suitable for the tile format and laying pattern, then lay adjacent tiles.

3 Tile levelling

Wedge System: Insert the wedge into the spacer clip in the direction of the already laid tile, and press with fingers or use a specific pliers, until the desired leveling is achieved.

Screw system: insert the cap by threading it onto the screw - or by pressing the tabs in the case of **MapeLevel EasyClick** – until it is in contact with the tiles. Complete adjustment by rotating the cap until the tiles are perfectly level.

Clean any fresh adhesive residue from around clips to prevent dried/cured mortar from potentially chipping or scratching the tile surface when removing clips later.

4 Removal

Once the adhesive is set, remove the tile levelling system by tapping the spacer clips with a rubber hammer or feet, in the same direction as the grout joint.

Separate the disposable elements from the reusable wedges caps.

For further information, please refer to the relevant Technical Data Sheet.

Adhesives for ceramic and stone material

The performance characteristics of adhesives may be deduced from their classification code according to EN 12004 as illustrated in the summary table.

CHEMICAL NATURE	
Cementitious adhesives	C
Water dispersion-based adhesives	D
Reactive adhesives	R

FUNDAMENTAL CLASSES	
Normal adhesion	1
Improved adhesion	2
Quick application	F

OPTIONAL CHARACTERISTICS	
Extended open time	E
No vertical slip	T
Deformable cement-based adhesive	S1
Highly deformable cement-based adhesive	S2

ADHESIVES PERFORMANCE CHARACTERISTICS

An important addition to UNI 11493-1 is contained in appendix D, a schematic summary of the minimum requirements of adhesives (in compliance with EN 12004) according to the following factors.

- Type and format of the material.
- Type and characteristics of the substrate.
- Final use.
- Work execution restraints and requirements.
- Exposure of the surface.

MAIN DIFFERENCES BETWEEN THE VARIOUS ADHESIVES

Extended open time

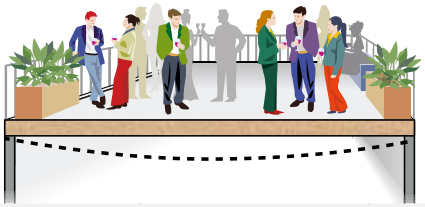
Use **adhesives with extended open time** (class E according to EN 12004) when bonding in unfavourable climatic conditions (wind, high temperatures, low humidity, absorbent substrates, etc.).

Vertical slip

Use **slip-resistant adhesives** (class T according to EN 12004), especially when bonding tiles on unconnected walls or mosaic.

Deformability of the adhesive

Use **deformable adhesive** (class S1 or S2 according to EN 12004) with the capacity of absorbing the stresses generated between the tiles and bonding surface without damaging the tiles when required (bonding on substrates subjected to vibrations or flexion, bonding on external surfaces, etc.).



Quick application

Use **rapid-setting adhesive** (class F according to EN 12004) when the time required before putting the tiling into service needs to be reduced or at low temperatures.

Mapei adhesive ranges

ADVANTAGES

- Technologically advanced systems.
- Certified according to the most severe international standards.
- Eco-sustainable.
- Products from the **Zero Line** with fully offset CO_2 emissions.
- Easy to use.
- For floor and wall coverings, for internal and external use.

PRODUCTS

From **Mapei**, a wide range of high-quality products for bonding ceramic tiles, stone material and mosaic, suitable for any condition and use.

Class C1 CEMENTITIOUS ADHESIVES

Keraset, **Kerabond Easy**, **Kerabond**, **Kerabond T**, **Tixobond White**

Class C2 CEMENTITIOUS ADHESIVES

Kerabond Plus, **Adesilex P8**, **Adesilex P9**, **Adesilex P10**, **Keraflex**

Class C2S1 DEFORMABLE CEMENTITIOUS ADHESIVES

Ultraflex S1 2K, **Keraflex Easy S1 Zero**, **Keraflex Extra S1 Zero**, **Keraflex Maxi S1 Zero**

LIGHTWEIGHT CEMENTITIOUS ADHESIVES

Ultralite Flex, **Ultralite S1 Flex Zero**, **Ultralite S2 Flex**, **Ultralite S1 Flex Quick**, **Ultralite S2 Flex Quick**

QUICK-SETTING CEMENTITIOUS ADHESIVES

Adesilex P4, **Adesilex P9 Express**, **Granirapid**, **Keraquick Maxi S1**, **Elastorapid**

REACTIVE ADHESIVES

Keralastic, **Keralastic T**, **Ultrabond EP 2K**, **Ultrabond Eco PU 2K**, **Kerapoxy Adhesive**

DISPERSION ADHESIVES

Adesilex P22, **Ultramastic III**

Ceramics project

Obtain the technical specifications and product consumption rates for your project.

Design your own installation solution.

PREPARATION AND APPLICATION OF CEMENTITIOUS ADHESIVE

1 Preparation of mix

- Mix the powdered adhesive with the required amount of water or latex and for long enough to form a smooth, lump-free mix.
- Leave the adhesive mix to stand for some minutes and then mix again briefly before spreading.
- Only mix the amount of adhesive that can be used within its workability time.

2 Choosing the right trowel and applying the adhesive

- Apply the adhesive with a suitable notched trowel so that the right amount of adhesive is applied and to guarantee the back of the tile is wetted correctly. The amount of adhesive varies depending on the area of use, the evenness of the substrate and the size of the tiles.
- If the open time of the adhesive is exceeded (already applied to the substrate) but is still soft when pressed lightly with a finger, it may still be used by passing over the surface a notched trowel. This operation must not be carried out once the adhesive has started to set, in this case remove and apply it again.

3 Wetting properties of the adhesive

Use adhesive with high wetting properties such as **Ultralite Flex** range, or self-wetting adhesive such as **Adesilex P4** for good wetting of the back of the tiles (bonding large formats, slim tiles, bonding on external surfaces, etc.).

4 Double-buttering

Apply the adhesive on the substrate and on the reverse side of the tiles, ensuring the continuity of the adhesive layer in the case of installation on façades, of large format tiles (longest side more than 60 cm), on heated substrates and in environments subject to high mechanical or thermal stress.

For further information, please refer to the relevant Technical Data Sheet.

	CLASSIFICATION ACCORDING TO EN 12004	GEV	EPD		Ultralite Technology	Fast Track Ready	Colours		Waiting time before grouting		POT LIFE OF THE MIX	OPEN TIME	SET TO LIGHT FOOT TRAFFIC	WAITING TIME BEFORE PUTTING INTO SERVICE	PACKAGING
							White	Grey	On walls	On floors					
ADESIVI CEMENTIZI A PRESA NORMALE															
Keraset	C1	EC1 Plus					✓	✓	3-6 hours	24 hours	6-8 hours	20 min	24 hours	14 days	25 kg
Kerabond Easy	C1	EC1 Plus					✓	✓	4-8 hours	24 hours	8 hours	20 min	24 hours	14 days	25 kg
Kerabond	C1	EC1 Plus					✓	✓	4-8 hours	24 hours	8 hours	20 min	24 hours	14 days	5, 25 kg
Tixobond White	C1 TE	EC1 Plus					✓		4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
Kerabond Plus	C2 E	EC1 Plus	✓				✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
Adesilex P8	C2 TE	EC1 Plus					✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
Adesilex P9	C2 TE	EC1 Plus					✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	5, 25 kg
Keraflex	C2 TE	EC1 Plus	✓				✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	5, 25 kg
Ultralite Flex	C2 TE	EC1 Plus		✓	✓		✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	15 kg
Adesilex P10	C2 TE	EC1 Plus					✓		4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
Adesilex P10 + Isolastic 50%	C2 TE S1						✓		4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
Ultraflex S1 2K	C2 TE S1						✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	32.5 kg
Keraflex Easy S1 Zero	C2 E S1	EC1 Plus	✓				✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
Keraflex Extra S1 Zero	C2 TE S1/ C2 E S1	EC1 Plus	✓				✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
Keraflex Maxi S1 Zero	C2 TE S1	EC1 Plus	✓	✓			✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
Ultralite S1 Flex Zero	C2 TE S1	EC1 Plus	✓	✓	✓		✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	15 kg
Ultralite S2 Flex	C2 E S2	EC1 Plus		✓	✓		✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	15 kg
Kerabond + Isolastic	C2 E S2						✓	✓	4-8 hours	24 hours	8 hours	20 min	24 hours	14 days	5, 25 kg
Kerabond Plus + Isolastic	C2 E S2						✓	✓	4-8 hours	24 hours	8 hours	>30 min	24 hours	14 days	25 kg
ADESIVI CEMENTIZI A PRESA RAPIDA															
Adesilex P4	C2 F	EC1 Plus				✓		✓	4 hours	4 hours	1 ora	15 min	4 hours	1 day	25 kg
Adesilex P9 Express	C2 FE	EC1 Plus				✓	✓	✓	after 4 hours	after 4 hours	45 min	20 min	4 hours	1 day	25 kg
Granirapid	C2 F S1	EC1 Plus	✓			✓	✓	✓	3 hours	3 hours	45 min	20 min	3-4 hours	1 day	30.5 kg
Keraquick Maxi S1	C2 FT S1	EC1 Plus	✓			✓	✓	✓	2-3 hours	2-3 hours	45 min	20 min	2-3 hours	1 day	5, 23-25 kg
Ultralite S1 Flex Quick	C2 FE S1	EC1 Plus		✓	✓	✓	✓	✓	2-3 hours	2-3 hours	50 min	20 min	2-3 hours	1 day	15 kg
Keraquick Maxi S1 + Latex Plus	C2 FT S2					✓	✓	✓	2-3 hours	2-3 hours	30 min	20 min	2-3 hours	1 day	25 kg
Ultralite S2 Flex Quick	C2 FE S2	EC1 Plus		✓	✓	✓	✓	✓	2-3 hours	2-3 hours	50 min	>30 min	2-3 hours	1 day	15 kg
Elastorapid	C2 FTE S2		✓	✓		✓	✓	✓	3 hours	3 hours	1 hour	>30 min	3 hours	1 day	31.25 kg
ADESIVI A BASE DI RESINE SINTETICHE															
Adesilex P22	D1 TE						✓		24 hours	24 hours	ready to use	>30 min	48 hours	7-14 days	1, 5, 10, 25 kg
Ultramastic III	D2 TE						✓		24 hours	24 hours	ready to use	>30 min	48 hours	7 days	1, 5, 10, 18 kg
ADESIVI REATTIVI															
Keralastic	R2						✓	✓	12 hours	12 hours	30-40 min	50 min	12 hours	7 days	5, 10 kg
Ultrabond EP 2K	R2						✓	✓	12 hours	12 hours	45 min	60 min	12 hours	2 days	10 kg
Keralastic T	R2 T						✓	✓	12 hours	12 hours	30-40 min	50 min	12 hours	7 days	5, 10 kg
Ultrabond Eco PU 2K	R2 T	EC1 Plus					✓	✓	12 hours	12 hours	20-30 min	20 min	12 hours	7 days	5, 10 kg
Kerapoxy Adhesive	R2 T						✓	✓	-	-	45 min	60 min	10-12 hours	2 days	10 kg

Grouts
for joints

The performance characteristics of grouts are identifiable by their classification code according to EN 13888-1 standards, as illustrated in the following table.

TYPE	CLASS	
RG	-	Mixture of synthetic resins, aggregates and organic and inorganic additives in which hardening takes place through a chemical reaction
CG	1	Normal cementitious grouting mortar
	1F	Rapid-setting cementitious mortar
	2W	Improved cementitious grouting mortar with reduced water absorption
	2FW	Improved rapid-setting cementitious grouting mortar with reduced water absorption
	2A	Improved cementitious grouting mortar with high resistance to abrasion
	2FA	Improved rapid-setting cementitious grouting mortar with high resistance to abrasion
	2WA	Improved cementitious grouting mortar with high resistance to abrasion and reduced water absorption
	2FWA	Improved rapid-setting cementitious grouting mortar with high resistance to abrasion and reduced water absorption

Cementitious and epoxy grouts range

PRODUCTS

From **Mapei**, a complete range of coloured grouts for all types of ceramic floor and wall tiles, stone and glass mosaics with the most suitable solution for any situation and guaranteed performance properties, durability, aesthetics and attention to people's health and the environment.

CEMENTITIOUS GROUTS

Keracolor GG, Keracolor FF, Keracolor SF, Ultracolor Plus

ADVANTAGES

- Mould-resistant **with BioBlock® technology**.
- Water-repellent, easier to clean **DropEffect®** technology.
- Anti-efflorescence, for uniform colour.

EPOXY GROUTS

Kerapoxy, Kerapoxy Easy Design, Kerapoxy CQ, Kerapoxy IEG

ADVANTAGES

- Impermeability.
- High resistance to aggressive chemicals.
- High mechanical strength.
- Resistant to mould and bacteria.
- Hygienic.
- Easy to apply and clean.
- Products from the Zero Line with fully offset CO_2 emissions.

Estimate the amount of product required to seal grout lines based on project data.

Go to the grouts calculator.

Grouts and sealants calculator

It has never been easier to pick a colour for your grout: create a preview of your ceramic floor or surface.

Discover the Mapei Grouts app.

Mapei Grouts app

Grouts selection charts

SUITABLE PRODUCT | MAPEI SUGGESTS

	Classification according to EN 13888	GEV			Acceptable width of the grout line	Application temperature	Pot life of mix	Waiting time before finishing operations	Set to light foot traffic	Ready for use	Packaging
CEMENTITIOUS GROUTS											
Ultracolor Plus	CG2FWA	EC1 Plus	✓	✓	up to 20 mm	from +5 to +35°C	20-30 min	15-30 min	3 hours	1 day	2.5 and 22 kg
Keracolor SF*	CG2WA	EC1 Plus			up to 4 mm	from +5 to +35°C	approx. 2 hours	10-20 min	24 hours	3 days	5 and 22 kg
Keracolor FF*	CG2WA	EC1 Plus	✓		up to 6 mm	from +5 to +35°C	approx. 2 hours	10-20 min	24 hours	3 days	5 and 25 kg
Keracolor GG*	CG2WA	EC1 Plus			from 4 to 15 mm	from +5 to +35°C	approx. 2 hours	10-20 min	24 hours	3 days	5 and 25 kg
EPOXY GROUTS											
Kerapoxy	RG	EC1 Plus			at least 1 mm	from +12 to +30°C	45 min	-	24 hours	4 days	2.5 and 10 kg
Kerapoxy CQ	RG	EC1 Plus		✓	at least 1 mm	from +12 to +30°C	45 min	-	12 hours	4 days	3 and 10 kg
Kerapoxy Easy Design	RG	EC1 Plus	✓		from 1 to 15 mm	from +12 to +30°C	45 min	-	24 hours	4 days	1.5 and 3 kg
Kerapoxy IEG	RG	EC1 Plus		✓	at least 3mm	from +12 to +30°C	45 min	-	24 hours	4 days	10 kg
READY-TO-USE PASTE GROUTS											
Flexcolor	-		✓	✓	from 2 to 5 mm	from +5 to +35°C		10-15 min	48 hours	7 days	5 kg

*Products to be mixed with water or **Fugolastic**.

2 Choose a product

1 Identify the type of use

	Cementitious grouts				Epoxy grouts				Polymer grouts
	ULTRACOLOR PLUS	**KERACOLOR FF**	**KERACOLOR GG**	**KERACOLOR SF**	**KERAPOXY**	**KERAPOXY EASY DESIGN**	**KERAPOXY CQ**	**KERAPOXY IEG**	**FLEXCOLOR**
Joint width in mm	up to 20	up to 6	from 4 to 15	up to 4	min. 1	from 1 to 15	min. 1	min. 3	from 2 to 10
External areas									
Balconies and terraces	✓						✓		
Façade	✓	✓	✓						
Swimming pools	✓					✓	✓		
Internal areas									
Heated floor	✓	✓	✓	✓		✓	✓		
Residential environments	✓	✓		✓		✓	✓		✓
Public buildings	✓	✓	✓			✓	✓		
Commercial environments	✓		✓			✓	✓		
Foodstuffs industries					✓		✓	✓	
Areas subject to intense traffic	✓				✓		✓	✓	
Kitchens	✓				✓	✓	✓		
Damp environments	✓					✓	✓		

APPLICATION OF CEMENTITIOUS GROUTS

1 Before grouting joints, whatever type of mortar is used, wait until the adhesive has completely hardened and that the waiting times indicated in the relative Technical Data Sheet have been respected. The joints must be clean, free of all traces of dust and empty for at least 2/3 of their thickness.
Pour the powdered grout into a clean container with water or latex while mixing according to the quantities indicated on the Technical Data Sheet. Form an even mix, with a low-speed mixer. After 2-3 minutes of rest, re-stir briefly the mix before applying it.

2 Apply the grout in the joints in the wall and/or floor tiles using an appropriate **Mapei** trowel or rubber spreader without leaving any gaps or lippage. Remove excess grout from the surface of the tiles by passing the trowel or spreader diagonally to the joints while the grout is still wet.

3 When the grout loses its elasticity and becomes opaque, wash off any excess grout with a damp cellulose sponge (such as a **Mapei** sponge) working diagonally to the joints. Rinse the sponge frequently in two different containers of water: one container to remove the grout from the sponge and a second container, with clean water, to rinse the sponge.

4 Grout lines may also be finished off when the grout is partially hardened by passing a damp abrasive pad for grout (such as a *Scotch-Brite®* pad) along the grout lines. A single-head sander with a felt disk may also be used for this operation. If the joints are cleaned too soon (while the grout is still plastic) the grout could be dragged from the joints and leave gaps, which may then change colour more easily.

5 After final cleaning, if any cementitious residues remain on the surface of the tiling, they may be removed once fully cured using an acid cleaner (such as **UltraCare Keranet**, **UltraCare Keranet Crystals** or **UltraCare Acid Cleaner**). If it is necessary to use a product to remove residues of grout at the moment of installation, it is recommended to use **UltraCare Keranet Easy** spray, suitable for removing excess grout from surfaces during installation.

APPLICATION EPOXY GROUTS

1 Pour the entire contents of the catalyser (component B) into the container of component A and blend together with a mixer at low speed to form a smooth paste. It is not permitted to use half quantities to achieve the correct mixing ratio; the grout may not harden correctly. When using **Kerapoxy Easy Design MapeGlitter** (coloured metallic glitter for particular aesthetic effects) or **Mapecolor Metallic** (pearlescent mica-based powdered pigment for a metallic effect) may be added to the mix in varying amounts, within the limits on the data sheet and according to the effect required.

2 Apply the mix carefully in the grout lines (which must be dry prior to application) using a special rubber trowel (such as a **Mapei** trowel) making sure the grout lines are completely filled. Remove excess material by passing the edge of the same trowel diagonally over the tile joints.

3 Epoxy grout must be cleaned while still "wet". Wet the grouted surface and emulsify using a *Scotch-Brite®* pad, taking care not to remove grout from inside the joint. The pad must be saturated with water when cleaning wall coverings.

4 Remove any excess liquid from the surface with a hard, cellulose sponge (such as a **Mapei** sponge, for example). Replace the sponge when it becomes impregnated with too much resin. It is important to leave no traces of grout on the surface of the tiling after the finishing operation. Once hardened, it is very difficult to remove. Therefore, the sponge must be rinsed frequently during cleaning operations.

5 Final cleaning may also be carried out with **UltraCare Kerapoxy Cleaner** (special cleaner for epoxy grouts) immediately after grouting or upon completion of all installation operations. If tiles are cleaned several hours after applying the grout allow the product to react for longer (at least 15-20 minutes), otherwise the cleaning cycle may need to be repeated. The efficiency of **UltraCare Kerapoxy Cleaner** depends on the amount of residual resin and how much time has passed since application. In the case of cured or stubborn residues use **UltraCare Epoxy Gel**, a special high viscosity cleaner for removing residues of epoxy grout.

Sealants
for flexible joints

The characteristics of **Mapei** sealants meet the requirements of reference standards covering products used to create elastic seals in joints: **EN ISO 11600** *Jointing products - Classification and requirements for sealants.*

Calculate the consumption of the sealant

Calculate consumption rates according to specific project data, whatever type of sealant is used.

Go to the calculator

Sealants for flexible joints range

PRODUCTS

A complete range of coloured products for any request of sealing of floorings and coatings made of ceramic tiles, natural stone and glass mosaics.

FLEXIBLE SEALANTS

Mapesil AC, Mapesil AC ECO, Mapesil LM,Mapesil Tile Matt, Mapesil Stone Matt

ADVANTAGES

- Fast, safe and easy to apply.
- High flexibility.
- Solvent free.
- Mould-resistant.

	DESCRIPTION AND MAIN APPLICATION FIELDS	GEV EMICODE		Paintable	Type of application: Free-flowing	Type of application: Thixotropic	Elongation in service	Packaging
SEALANTS FOR FLEXIBLE JOINTS								
Mapesil AC	Solvent-free, pure acetic silicone sealant, ideal for internal sealing of joints on ceramic floors, damp settings and swimming pools.	EC1 Plus	✓			✓	25%	310 ml
Mapesil AC ECO	Pure acetic silicone sealant, manufactured and packaged at low environmental impact. Ideal for internal sealing of joints on ceramic floors, damp settings and swimming pools.	EC1 Plus	✓			✓	25%	310 ml
Mapesil Tile Matt	Neutral mould-resistant silicone sealant with matt finish for ceramics.	EC1 Plus				✓	25%* 20%**	300 ml
Mapesil LM	Neutral silicone sealant, ideal for sealing façade joints and joints between natural stone tiles.	EC1 Plus	✓			✓	25%	310 ml
Mapesil Stone Matt	Neutral, mould-resistant silicone sealant with matt finish, for stone and marble.	EC1 Plus				✓	25%* 20%**	300 ml
Mapeflex E-PU 21 SL	Two-component epoxy-polyurethane sealant ideal for internal joints in covered car parks, supermarkets, warehouses and storage areas.				✓		10%	5 kg
Mapeflex E-PU 30 NS	Two-component epoxy-polyurethane sealant ideal for vertical and horizontal joints in carparks, garages, courtyards, commercial areas and warehouses.					✓	10%	5 kg
Mapeflex PU 45 FT	One-component polyurethane sealant and adhesive ideal for sealing joints in civil and industrial floors.			✓		✓	20%	300 and 600 ml
Mapeflex PU50 SL	One-component polyurethane sealant ideal for civil and industrial floors, shopping centres, carparks and runways.			✓	✓		25%	600 ml or 12 kg
Mapeflex MS45	Hybrid elastic sealant and adhesive ideal for sealing joints in civil and industrial floors, suitable also for damp substrates.	EC1 Plus		✓		✓	20%	300 ml

* *wall*
** *floor*

Sealants chart

SUITABLE PRODUCT | MAPEI SUGGESTS

2 Choose a product

1 Identify the type of use

	Acetic silicone	Neutral silicone	Neutral silicone	Neutral silicone	Poly-urethane	Hybrid	Epoxy-polyurethane
	MAPESIL AC / MAPESIL AC ECO	MAPESIL TILE MATT	MAPESIL LM	MAPESIL STONE MATT	MAPEFLEX PU 45 FT	MAPEFLEX MS 45	MAPEFLEX E-PU21 SL
External areas							
Balconies and terraces	✓	✓			✓	✓	✓
Façade			✓	✓			
Swimming pools	✓		✓				
External courtyards					✓	✓	✓
Cracks					✓	✓	
Joints between different materials					✓	✓	
Fitting/glass joints	✓	✓					
Fitting/wall joints			✓	✓	✓	✓	
Internal areas							
Structural joints			✓	✓			
Cracks					✓	✓	
Joints for industrial floors					✓	✓	✓
Joints for civil floors	✓				✓	✓	✓
Joints with kitchen tops	✓		✓	✓			
Joints for stone coverings			✓	✓			
Tile joints	✓	✓	✓				
Sanitary joints for bathrooms	✓	✓		✓			
Fitting/glass joints	✓	✓		✓			
Fitting/wall joints			✓		✓	✓	
Bonding of skirtings and doorsteps					✓	✓	

APPLICATION
HOW TO SEAL ELASTIC JOINTS

1 All the surfaces to be sealed must be dry, sound and free of all traces of substances that could affect adhesion of the sealant.

2 Insert **Mapefoam** cord in the joint to set the correct depth and to make sure the sealant sticks only to the sides of the joint and not to the bottom.

3 Cut the cartridge at the top of the thread, then insert it into the gun. Extrude the sealant, selected from the **Mapei** range, into the joint.

4 Spray **UltraCare Smooth Silicone** on the joint after applying the sealant, before the formation of the surface skin.

5 Smooth the sealant and remove any excess product with a suitable tool such as **Perfect Seal**.

APPLICATION
SEALING CRITICAL AREAS

1 Seal around the grate of floor drains with **Mapesil AC**, **Mapesil AC Eco** or **Mapesil Tile Matt**.

2 Seal with **Mapesil AC**, **Mapesil AC Eco** or **Mapesil Tile Matt** in correspondence with skirting board-wall fillet joints.

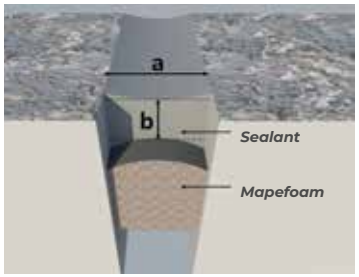
3 Seal joints in stone and on external façades with **Mapesil LM** or **Mapesil Stone Matt**.

For further information, please refer to the relevant Technical Data Sheet.

SIZE OF THE JOINT

The size of joints is fundamental The **width of the joint** (a), which refers to the distance between the two sides, must be dimensioned according to the amount of expansion in the tiles and must never be less than 5 mm. To set the depth of the joint and prevent sealant adhering to the bottom, insert **Mapefoam** closed-cell, extruded foam polyethylene cord, supplied in rolls in various lengths according to the diameter The depth (b) of the joint must be according to the following table.

a - width of joint	b - depth of joint
from 0 to 4 [mm]	increase the width of the joint
from 5 to 9 [mm]	b = a
from 10 to 20 [mm]	b = 10 [mm]
from 21 to 40 [mm]	b = a/2 [mm]
> 40 [mm]	reduce the width of the joint



TYPES OF JOINT COVERED BY UNI 11493-1 ITALIAN STANDARDS

STRUCTURAL JOINTS

Joint to be designed to match the joints existing in the structure. It must concern both the ceramic covering and the substrate throughout its thickness.

EXPANSION JOINTS

Joint that concerns the thickness of the ceramic covering only; it allows the tiled area to be divided into smaller areas. It reduces mechanical stresses related to temperature variations, for example.

DISTRIBUTION JOINTS

Joint involving the thickness of the ceramic covering and 1/3 of the thickness of the substrate. It reduces mechanical stresses caused by movements of the building or of its components.

PERIMETER JOINTS

Joint to be placed at the perimeter of the tiled surface, for example in the case of floor tiling where this borders elevated elements such as pillars, walls, kerbs.

MAPEI GROUT COLOUR CHART

	100	103	111	111 TEX	123	112	113	114	127	110	110 TEX	187	176	174	125	119	163	168	167	169	172	177	130	130 TEX	131	137	132	138	141	142	189	133	134	188	135	152	144	149	145	143	136	120	150	700	700 + MOONLIGHT*	700 + SHINING*	700 + STARDUST*	700 + SAHARA*	700 + RED CLAY*	700 + GOLD*	700 + SILVER*	282	290	147	146	173	283	182	183	151	165	999
ULTRACOLOR PLUS	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																			
KERACOLOR SF	●																																																												
KERACOLOR FF	●	●	●		●	●	●	●		●													●		●	●	●			●	●		●	●	●	●		●		●																						
KERACOLOR GG	●	●	●		●	●	●	●		●													●		●	●	●			●	●		●	●	●	●		●		●																						
FLEXCOLOR	●		●			●				●																	●																																			
KERAPOXY	●		●			●	●	●		●											●		●		●		●			●	●							●		●	●		●	●																			
KERAPOXY CQ	●		●				●	●															●				●																●									●	●	●	●	●	●	●	●	●	●
KERAPOXY EASY DESIGN	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	■	■	■	■	■	▽	▼										
MAPESIL AC	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																			●
MAPESIL AC ECO	●	●	●			●	●	●		●													●				●				●												●																			●
MAPESIL LM	●		●			●	●	●		●													●				●																●																			●
MAPESIL TILE MATT	●	●				●	●	●		●													●				●					●											●																			●
MAPESIL STONE MATT	●			●			●			●	●												●	●			●																●																			

* *For the correct use of **MapeGlitter** and **Mapecolor Metallic**, always refer to relevant technical data sheets.*

■ ***Kerapoxy Easy Design** may be mixed with **Mapecolor Metallic** to create a metallic effect.*

▶ ***Kerapoxy Easy Design** may be mixed with **MapeGlitter** to create aesthetic effects.*

Due to the printing process involved, the colours shown are merely indicative.

Product for **cleaning**, **maintaining** and **protecting surfaces**

The **UltraCare** line is a complete range of cleaners, protectors and complementary products formulated to be safe to use and easy to apply and meet all needs with regards to cleaning, protecting and keeping various types of surfaces in good condition over time while maintaining their performance properties and attractive finish.

Cleaning solutions

ADVANTAGES

Recommended for:
- cleaning operations once site work is complete;
- cleaning up after installing and grouting tiling using cementitious products;
- cleaning up after installing and grouting tiling using epoxy products;
- cleaning surfaces in preparation for restoration work or application of a new cycle or treatment;
- normal, routine cleaning of surfaces;
- deep-down cleaning of surfaces prior to unscheduled maintenance work;
- products from the **Zero Line** with fully offset CO_2 emissions.

PRODUCTS

PRODUCT	DESCRIPTION	IDEAL FOR	REMOVES
UltraCare Multicleaner	Concentrated neutral cleaner.	Everyday cleaning.	Stains, grease, cementitious residues from surfaces sensitive to acids, such as natural stone.
UltraCare Multicleaner Spray	Ready to use spray cleaner.	Quick and easy everyday cleaning.	Stains, grease.
UltraCare HD Cleaner	Highly effective degreaser and cleaner.	Deep-down cleaning and non-scheduled maintenance, preparing surfaces prior to renovation work or application of a new treatment.	Dirt of organic nature, treatments using water-based or metallic wax, tough stains/grease on substrates resistant to alkalis.
UltraCare Keranet	Acid-based concentrated liquid cleaner.	Deep-down cleaning after installation and grouting with cementitious products.	Residues of cured cementitious products, saline and lime-based efflorescence and rust stains.
UltraCare Keranet Easy	Acid-based ready to use spray cleaner.	Cleaning upon completion of site work, including immediately after grouting with cementitious products. Cleaning the back of tiles.	Surface residues of fresh cement, lime and efflorescence. Small residues of cured grout.
UltraCare Keranet Crystal	Concentrated powder acid cleaner.	Deep-down cleaning after installation and grouting with cementitious products.	Residues of cured cementitious products, saline and lime-based efflorescence and rust stains.
UltraCare Acid Cleaner	Acid-based multi-purpose concentrated liquid cleaner.	Cleaning after installation work and grouting with cementitious products.	Traces of dirt, including of organic nature, hardened residues of cementitious products, saline and lime-based efflorescence, rust stains, tough stains and traces of slip on tiles.
UltraCare Kerapoxy Cleaner	Special ready to use cleaner.	Cleaning epoxy grout from tiles during and after installation.	Residues of epoxy grout.
UltraCare Epoxy Off Gel	Special high-viscosity cleaner.	Cleaning epoxy grout from tiles after installation, ideal for vertical surfaces.	Cured or stubborn residues of epoxy grout.
Ultracare Grout Cleaner	Ready to use alkaline spray cleaner.	Rapid, effective cleaning action in both internal and external environments grouted with epoxy or cementitious products.	Cleaning residues of cementitious and epoxy grouts on porcelain tiles, ceramics, Terracotta tiles, Klinker, glass mosaic, engineered and natural stone and cementine provided that is not polished and/or not treated with wax.
Ultracare Mould Remover	High penetration detergent spray with immediate effect.	It removes moulds from surfaces deteriorated by moulds and algae and hygienizes the surfaces.	Mould from stone, render, concrete, terracotta, grout lines and ceramic, glass and klinker tiles.
UltraCare Rust Remover	Acid-free cleaner in water solution with a slightly alkaline pH.	Unscheduled maintenance operations.	Superficial and deep rust stains.
UltraCare Stain Remover	Detergent with a thick consistency in water solution.	Unscheduled maintenance operations.	Removing organic stains from terracotta, natural and artificial stone and surfaces in cement.

APPLICATION CLEANERS

ACCORDING TO THE TYPE OF PRODUCT:

1. May be used either neat or diluted with water at different rates according to requirements and depending on the level of concentration required and amount of dirt to be removed.
2. Once applied, clean surfaces using a single-head cleaning machine or an abrasive pad. Whereas for spray-applied products, once applied, clean surfaces using a damp cellulose sponge, a cloth, an abrasive sponge or a suitable brush.
3. The surface may then need to be rinsed with water, according to the type of product used and level of dilution.

For specific details on how to use and apply each product, refer to the relative data sheet.

Protectors

ADVANTAGES

Ideal for:
- protecting and brightening up surfaces;
- water-based water and oil-repellent protection;
- protection for polished porcelain tiles and cementitious grout;
- protection for grout;
- temporary protection of external horizontal surfaces exposed to bad weather.

PRODUCTS

PRODUCT	DESCRIPTION	SUITABLE FOR
UltraCare Intensifier W	Water-based protection and colour enhancer.	Application on walls and floors, both in interior and exterior. Enhances the colour of natural stone with medium-high absorbency: Terracotta, terrazzo, cementine, marble-stone chip, engineered cementitious stone, etc.
UltraCare Intensifier S	Solvent-based colour enhancer and protector.	Application on walls and floors, both in interior and exterior. Enhances the colour of natural stone (including stone with a polished finish) Terracotta, terrazzo, cementine, engineered cementitious stone, etc.
UltraCare Stain Protector S	Solvent-based water and oil-repellent protection.	Application on the surface of internal and external brick, stone, marble, granite, marble/stone chip, cementine and engineered cementitious floor and wall coverings. Ideal for work surfaces, kitchen tops and bathrooms.
UltraCare Stain Protector W	Water-based water and oil-repellent protection for unpolished surfaces.	Reduces absorption of watery, oily and greasy substances and, as a result, makes it easier to clean and maintain the surface of terracotta, brick, unpolished stone, marble and granite, stone/marble chip, cementine and engineered cementitious stone on which it is applied. The product is suitable for application on food contact surfaces and can be used on floors and coatings, work surfaces, kitchen tops and bathrooms, in internal and external areas.
UltraCare Stain Protector W Plus	Water-based improved water and oil-repellent protection.	Reduces absorption of watery, oily and greasy substances and, as a result, makes it easier to clean and maintain the surface of terracotta, brick, stone/marble/granite (including with a polished finish), stone/marble chip, cementine and engineered cementitious stone on which it is applied. The product is suitable for application on food contact surfaces and can be used on floors and coatings, work surfaces, kitchen tops and bathrooms. in internal and external areas.
UltraCare Grout Release	Protection prior to grouting with cementitious products.	Terracotta, Klinker, natural stone, artificial and engineered stone as water-based protector. The product is a stain-resistant protector specific for thin polished ceramic tiles. It is used as pre-grouting treatment (for cementitious grouts) to reduce the risk of staining and facilitate cleaning.
UltraCare Grout Protector	Protection for grouts and porcelain tiles.	Water, oil and stain-resistant protector specifically formulated for joints sealed with cementitious grouts and for full-body porcelain flooring. To be applied on completely cured cementitious grouts which already underwent after-laying acid cleaning.
UltraCare Anti-Mould Protector	High performance, water-based mould protector.	Protection of stone, render (including painted render), cement, Terracotta, grouts, ceramics, glass and klinker from the formation of moulds.
UltraCare Rain Protector S	Solvent-based water-repellent protector and consolidator with very high contact angle.	Temporary protection for flooring in external environments subject to contact with rainwater. Water-repellent treatment for porcelain, cement, natural stone, clinker, terracotta and similar materials.
UltraCare Rain Protector W	Solvent-free protective and water-repellent treatment.	Temporary protection for flooring in external environments subject to contact with rainwater. Water-repellent treatment for porcelain, cement, natural stone, clinker, terracotta and similar materials.

APPLICATION OF PROTECTORS

ACCORDING TO THE TYPE OF PRODUCT:

1. The products are ready to use and do not need to be diluted with water. Shake well before application.
2. Apply on clean, dry surfaces (some products may be applied on slightly damp surfaces) with a brush or other means, such as a cloth or a waxing mop.
3. Evenly distribute the product on the surface to be treated. Completely remove any excess before the product dries.
4. Two coats of product may be required, particularly on absorbent surfaces or according to specific needs.

We recommend carrying out a preliminary test on a hidden part of the surface, in order to evaluate the compatibility of the product before applying it on the whole area.

For specific details on how to use and apply each product, refer to the relative data sheet.

Complementary products

ADVANTAGES

Ideal for:
- renovating existing cementitious grouts;
- finishing sealants during application;
- products from the **Zero Line** with fully offset CO_2 emissions.

PRODUCTS

PRODUCT	DESCRIPTION	SUITABLE FOR
UltraCare Fuga Fresca	Acrylic resin-based polymeric paint in water dispersion.	Quickly and easily applied to refresh and modify the colour of cementitious grout joints in interior. Thanks to its particular characteristics it creates grout lines with a uniform colour that are also easier to maintain.
UltraCare Smooth Silicone	Professional water-based smoothing product.	Finishing off the surface of all types of sealants (acetic, neutral, polyurethane, etc.) to create a smooth, compact surface with no cavities.

APPLICATION COMPLEMENTARY PRODUCTS

ULTRACARE FUGA FRESCA - DOSAGE CANISTER:

1. Shake the bottle before use.
2. Unscrew the cap and apply the product by pressing the sponge applicator lightly on the surface of the joints, which must be clean and free of loose parts, mould and calcium deposits.
3. Wait a few minutes until the product applied on the joints is dry (according to actual environmental conditions). Remove any traces of the product from the edges of the tiles using a damp sponge.
4. After use, thoroughly clean the sponge applicator on the canister.

ULTRACARE FUGA FRESCA - DRUM:

1. The product is ready to use. Mix the product in the drum thoroughly before use.
2. Using a brush of suitable size, spread the product on the surface of the joints, which must be clean and free of loose parts, mould and calcium deposits.
3. Wait a few minutes until the product applied on the joints is dry. Remove any traces of the product from the edges of the tiles using a damp sponge.

ULTRACARE SMOOTH SILICONE:

1. The product is ready to use and does not need to be diluted with water.
2. Spray **UltraCare Smooth Silicone** on the joint after applying the sealant, before the formation of the surface skin. Then finish using a suitable tool.

We recommend carrying out a preliminary test on a hidden part of the surface, in order to evaluate the compatibility of the product before applying it on the whole area.

For specific details on how to use and apply each product, refer to the relative data sheet.

Mapei technologies and certifications

Mapei and sustainability

Mapei concretely promotes sustainability by developing products and cutting-edge technological solutions that contribute to the protection of the environment and the health.

BIOBLOCK® TECHNOLOGY

Mapei technology that prevents the formation and proliferation of mould.

DROP EFFECT®

Mapei technology based on the use of special hydrophobising additives that allows surfaces to be highly water-repellent, less subject to dirt and with excellent durability.

LOW DUST

Mapei Low Dust technology reduces the emission of dust during the mixing, processing and use phases of a powdered product, with benefits for the environment and the health of the applicator.

ULTRALITE FLEX

Light-weight adhesives characterised by low density and higher yield than conventional adhesives.

EPDS

In 2016, **Mapei** obtained certification from Certiquality for the emission process of EPD (Environmental Product Declaration). EDPs describe the environmental impacts of a product throughout its life cycle by measuring impacts using the standardised LCA (Life Cycle Assessment) methodology.

FULLY OFFSET GREENHOUSE GAS EMISSIONS

CO_2 emissions measured throughout the life cycle of products from the **Zero Line** in 2023 using LCA methodology, verified and certified by EPD, are offset through the acquisition of certified carbon credits in support of renewable energy and forestry protection projects.

ATICELCA 501

If correctly emptied up to 90% of the packaging may be recycled with normal paper according to the ATICELCA 501 method.

Complies with European standards

Mapei products and laying systems comply with the European regulation for construction products (CPR 305/2011 former CPD).

Adhesives for ceramic tiles and stone materials, plasters, screed materials, masonry mortars, products for the restoration and protection of concrete, concrete admixtures, fixing systems, thermal insulation systems, etc. comply with European legislation and bear the CE marking required by the CPR. Special logos in the catalogue and on technical data sheets indicate the compliance with this requirement and the reference standard.

Additional logos refer to product characteristics according to the designations of the relevant European standards.

Since 2005, these products, tested and certified by qualified international institutes, have been awarded the 'EC1' label (very low emission of volatile organic compounds) and, since 2010, Both marks are issued by the GEV (Gemeinschaft Emissionskontrollierte Verlegewerkstoffe, Klebstoffe und Bauprodukte e.V.), an association for the control of emissions from flooring products, adhesives and building materials of which **Mapei** is a member.

Mapei has products available that comply with the requirements for MED certification for use in the marine industry.

MAPEI INSTALLATION SYSTEMS

1 INSTALLATION OF LARGE FORMAT CERAMIC TILES

1. Render **Intomap R2 Fibro**
2. Adhesive **Ultralite S1 Flex Zero**
3. Large format ceramic tiles
4. Grout **Kerapoxy Easy Design**
5. Sealant **Mapesil AC**

VERIFYING THE TYPE AND CONDITION OF THE SUBSTRATE

Large format tiles may be installed on all substrates normally used in the building industry such as concrete, cementitious and anhydrite screeds, screeds made from special binders such as **Topcem Pronto** or **Mapecem Pronto**, heated screeds, old ceramic and stone floors, metal, cementitious-based and gypsum-based render, aerated concrete blocks, plasterboard and internal substrates waterproofed with cementitious products from the **Mapelastic** range or **Mapegum WPS**. The suitability of a substrate for this type of installation must always be checked beforehand.

HANDLING, CUTTING AND MAKING HOLES IN LARGE FORMAT TILES

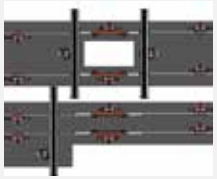
Great care must be taken when handling and moving large format tiles: one or more people are required and special tools and equipment should be used.

1 To facilitate handling and moving tiles, it is recommended to carry and install them with runners, frames and suction cups to hold them firmly and limit any twisting or bending. Once the tiles have been removed from their packaging, care must be taken when putting them in position by resting the long side of the tiles on the ground and keeping them at an angle of 30° with respect to the substrate.

2 To ensure a firm hold, it is recommended to clean the surface of the tiles and the sucker cups with a damp sponge before starting to move them.

3 Either traditional sucker cups or those with an in-built pump may be used. The latter type are more secure because they create a vacuum and have a better grip and the vacuum in the sucker cup can be re-established by pressing on the small plunger, even after a certain period of time. Always make sure a good vacuum has been created between the lifting device and the surface of the tile.

4 If a tile has been cut, which could make it weaker in that area, it is recommended to add more runners or cross-members to reduce any localised bending or twisting.



5 To make a linear cut in a tile, score a 1-2 cm long incision at the edges of the tile; the incisions should be made from inside the tile towards the edge.

6 Then complete the incision from one edge of the tile to the other, making sure the same amount of pressure is applied on the cutting tool for the entire length of the incision.

7 Cut the tile along the incision using tile nippers, starting from each end and following the incision.

8 Then break the tile by simply bending it until the two pieces come apart.

9 If there is reinforcement mesh on the back of the tile this can be cut and trimmed with a cutter.

10 If the edges of the tile are sharp or uneven after it has been cut, trim and smooth the edges with a diamond pad or an abrasive disk.

11 An alternative method is to cut along the incision with a disk cutter mounted on a guide rail. A through cut or a partial cut may be made with this method. In this case, the tile will have a cleaner and better defined edge than by cutting and breaking the tile.

12 Use a dry or wet diamond cutter to make round holes in tiles. Place the tile on the work surface and mark the position of the hole. Start making the hole with the cutting head placed at a slight angle to the tile so that it cuts through it more accurately. Once the cutting head has started to make the hole, press down and apply a small circular movement. Keep the cutting area wet if using the wet method or remove all the resulting dust during the drilling operation if dry cutting.

13 To make rectangular holes in a tile, start by drilling a small round hole at each corner of the rectangle. Then make straight cuts between each hole with a grinder or cutter with a diamond disk. This will prevent excessive stresses being generated at the corners of the rectangle which could then form a crack in the tile itself.

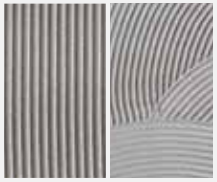
INSTALLATION PROCEDURE

1 The adhesive must be chosen according to the type of substrate material, the type and size of the tiles and the type of use. Choose deformable cementitious adhesive (minimum class C2 S1 according to EN 12004) to guarantee good wetting of the back of tiles, which is how adhesives from the **Ultralite Flex Range** in particular are formulated.

Find the most suitable adhesive using the table on page 88.

2 To spread the adhesive on the substrate use a trowel or spreader with inclined notched teeth (with a pitch of at least 10 mm) to get better distribution of the adhesive. To spread the adhesive on the back of tiles, on the other hand, use a trowel or spreader with smaller notches (square notches at least 3-4 mm wide) so that almost 100% of the tile is wetted with adhesive.

3 The adhesive should be applied in a straight line, with no circular movements, and parallel to the short side of the tile to reduce the distance air expelled from the back of the tile needs to travel.



4 The adhesive must be spread in the same direction on the back of the tile and on the substrate (in straight lines parallel to the short side of the tile).

5 To make handling and installing the tiles easier and safer, it is recommend to use runners and cross-members or a frame with suction-cups. Install the tiles by placing the ribs of adhesive on the substrate and on the back of the tile parallel and over each other to help push the air out.

6 To ensure the tile is fully bonded and that all the air has been expelled, go over the surface of the tile with a vibro-plate or tap the surface by hand with a specific rubber tiling float with no bounce. We suggest tapping the tile from the centre working towards the edges in the same direction as the ribs of adhesive, that is, parallel to the short side, so that all the air under the tile is forced out.

7 The same procedure is used to install both floor and wall tiles. When installing tiles on facades, the design engineer must assess whether additional mechanical safety fasteners are required.

8 Another essential requirement when installing large format tiles is that the adhesive must guarantee a high level of wetting on the back of the tiles so that no voids are created, otherwise the soundness and durability of the bond could be compromised.

GROUTING AND SEALING JOINTS

1 The grout lines between tiles must be at least 2 mm wide and must be increased according to the size and type of the tiles, the area of use (floor or wall tiles, internal or external) and the design loads and stresses when in service. Grout lines may be filled with cementitious grout, such as **Ultracolor Plus**, or with epoxy grout, such as **Kerapoxy**, **Kerapoxy Easy Design** or **Kerapoxy CQ**.

To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems. It is important to place the spacers in position before installing tiles and to embed them in the adhesive.

2 The width of joint is determined according to the thickness and size of the tiles, the characteristics of the substrate, the area of use and the loads present. To fill internal joint on walls and floors use **Mapesil AC**, while for external joint use **Mapesil LM** on walls and **Mapesil AC** for floors, after inserting **Mapefoam** where required. In those cases where particular mechanical properties are required, use **Mapeflex E-PU21 SL**, **Mapeflex PU45 FT** and **Mapeflex PU50 SL**. For the surface finish of the sealant, apply **UltraCare Smooth Silicone**.

3 Choosing whether to use large format tiles often depends on whether it is possible to create continuous, large surface areas. To avoid having unsightly cuts in tiles in correspondence with distribution or expansion joints, include an anti-fracture membrane, such as **Mapeguard UM 35** or **Mapetex System**, and position the new joints according to the new layout or pattern.

INSTALLING INTERNAL FLOOR/WALL TILES AND EXTERNAL FLOOR TILES

Type of substrate (*) (**)	Size of tile	NORMAL SETTING		RAPID SETTING	
		Adhesive	Class according to EN 12004	Adhesive	Class according to EN 12004
Cementitious screeds and render Anhydrite screeds and render*** Self-levelling compound Concrete Cement fibre panels Plasterboard*** Old ceramic, terrazzo and stone Anti-fracture and uncoupling membranes (**Mapeguard UM 35**) Multipurpose panels (**Mapeguard Board**)***	All formats	**Keraflex Maxi S1 Zero** **Ultralite S1 Flex Zero**	C2TE S1 C2TE S1 C2TE S1	**Keraquick Maxi S1** **Ultralite S1 Flex Quick**	C2FT S1 C2FE S1
Soundproofing systems (**Mapesonic CR**)***	All formats	**Keraflex Maxi S1 Zero** **Ultralite S2 Flex**	C2TE S1 C2TE S1 C2E S2	**Keraquick Maxi S1** **Ultralite S2 Flex Quick**	C2FT S1 C2FE S2
Heated screeds***	side ≤ 120 cm	**Keraflex Maxi S1 Zero** **Ultralite S1 Flex Zero**	C2TE S1 C2TE S1 C2TE S1	**Keraquick Maxi S1** **Ultralite S1 Flex Quick**	C2FT S1 C2FE S1
	side > 120 cm	**Ultralite S2 Flex** **Kerabond + Isolastic**	C2E S2 C2E S2	**Ultralite S2 Flex Quick** **Keraquick Maxi S1 + Latex Plus**	C2FE S2 C2FT S2
Waterproofing systems (from the **Mapelastic** line and **Mapegum WPS**, **Mapeguard UM 35** and **Mapeguard WP 200***)	All formats	**Keraflex Maxi S1 Zero** **Ultralite S1 Flex Zero** **Ultraflex S1 2K**	C2TE S1 C2TE S1 C2TE S1 C2TE S1	**Keraquick Maxi S1** **Ultralite S1 Flex Quick**	C2FT S1 C2FE S1
Wood*** PVC, rubber and linoleum*** Metal surfaces Resin***	All formats	**Keralastic** **Keralastic T** **Ultrabond EP 2K** **Ultrabond Eco PU 2K**	R2 R2T R2 R2T	**Keraquick Maxi S1 + Latex Plus**	C2FT S2

(*) Gypsum and anhydrite-based surfaces must always be primed beforehand with **Primer G** or **Eco Prim T Plus**
(**) Non-absorbent substrates should be primed beforehand with **Eco Prim Grip Plus** where necessary
(***) For internal environments only

INSTALLING EXTERNAL WALL TILES

Type of substrate	Size of tiles (*)	NORMAL SETTING		RAPID SETTING	
		Adhesive	Class according to EN 12004	Adhesive	Class according to EN 12004
Cementitious render Concrete	side ≤ 90 cm	**Keraflex Maxi S1 Zero** **Ultralite S1 Flex Zero**	C2TE S1 C2TE S1 C2TE S1	**Keraquick Maxi S1** **Ultralite S1 Flex Quick**	C2FT S1 C2FE S1
	side > 90 cm	**Ultralite S2 Flex** **Kerabond + Isolastic**	C2E S2 C2E S2	**Ultralite S2 Flex Quick** **Keraquick Maxi S1 + Latex Plus**	C2FE S2 C2FT S2

(*) For tiles with reinforcement mesh and sides ≥ 120 cm use class R2/R2T adhesive such as **Keralastic**, **Keralastic T**, **Ultrabond EP 2K** or **Ultrabond Eco PU 2K**.

The installation guidelines in the tables are for indication purposes only and for normal conditions. For further information, please refer to the relative Technical Data Sheet for each product. Defining the most suitable installation system depends on specific site conditions and the format of the tiles. For particular installation situations please contact **Mapei Technical Services** or refer to the relative technical manual.

2 INSTALLATION OF CERAMIC TILES OVER EXISTING CERAMIC FLOOR TILES

1. Existing tiles, firmly bonded with no cracks
2. Skim coat to reintegrate areas with detached tiles **Planitop Fast 330**
3. Adhesive **Keraflex Maxi S1 Zero**
4. Ceramic tiles
5. Grout **Kerapoxy Easy Design**
6. Sealant **Mapesil AC**

CHECKING AND PREPARING THE SUBSTRATE

Make sure the existing floor is firmly bonded to the substrate and flat and that there are no traces of grease, oil, wax, paint/varnish, etc. Any tiles that are detached and/or cracked must be removed. Thoroughly clean the flooring by washing it down with a specific product such as **UltraCare HD Cleaner** or by abrading it with a power tool.

If the adhesive needs to bond more firmly to a smooth surface apply **Eco Prim Grip Plus** primer. Where necessary, repair/reintegrate gaps after removing tiles with **Planitop Fast 330** and use **Ultraplan** if the substrate is either out of flat or not at the level required.

INSTALLING CERAMIC TILES

Mapei adhesives of minimum class C2 according to UNI EN 12004, such as **Keraflex** or **Keraflex Maxi S1 Zero** according to the type and format of the tiles, bond perfectly to existing flooring as long as the flooring is free of any substance or material that could affect adhesion (dust, oil, wax, etc.). To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with cementitious grout such as **Ultracolor Plus** or with epoxy grout such as **Kerapoxy Easy Design**. Joints, changes in slope, corners and edges can then be sealed with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam**. after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

3 INSTALLATION OF CERAMIC TILES OVER EXISTING FLOORS WITH UNDERFLOOR SOUNDPROOFING

1. Existing tiles
2. Adhesive **Ultrabond Eco S955 1K**
3. Soundproofing membrane + tape around edges
   Mapesonic CR + **Mapesonic Strip**
4. Adhesive **Keraflex Maxi S1 Zero**
5. Ceramic tiles
6. Grout **Kerapoxy Easy Design**
7. Sealant **Mapesil AC**

CHECKING AND PREPARING THE SUBSTRATE

Make sure the existing floor is firmly bonded to the substrate and flat and that there are no traces of grease, oil, wax, paint/varnish, etc. Any tiles that are detached and/or cracked must be removed. Thoroughly clean the flooring by washing it down with a specific product such as **UltraCare HD Cleaner** or by abrading it with a power tool. Where necessary, repair/reintegrate gaps after removing tiles with **Planitop Fast 330**.

SOUNDPROOFING TO COMBAT FOOTSTEP NOISE

After applying **Mapesonic Strip** adhesive tape along walls around the perimeter of the room, lay sheets of **Mapesonic CR** bonded with **Ultrabond Eco V4 SP** adhesive for absorbent substrates (cementitious screeds or skim/smoothing layers) or, as an alternative, **Ultrabond Eco S955 1K** for non-absorbent substrates.

INSTALLING CERAMIC TILES

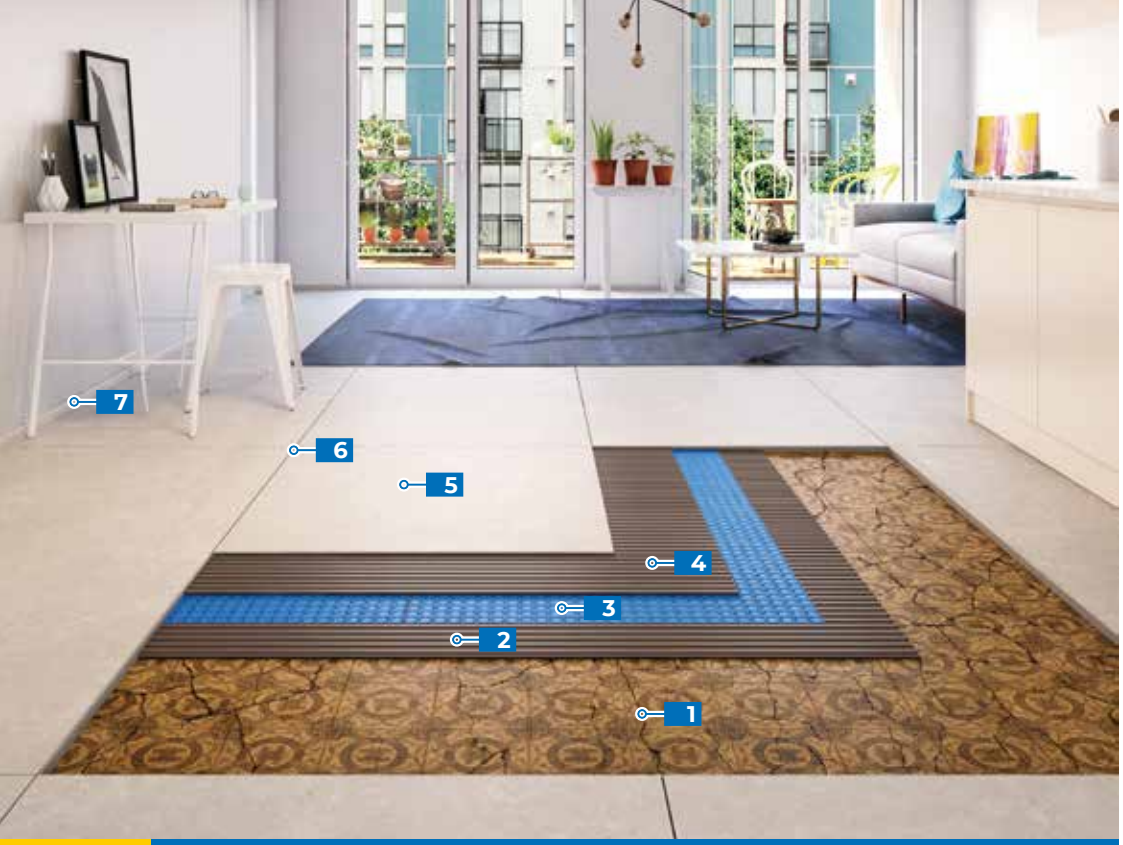
At least 24-48 hours after applying the sheets, bond the new flooring with deformable cementitious adhesive such as **Keraflex Maxi S1 Zero** or **Ultralite S1 Flex Quick**. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with **Kerapoxy Easy Design** anti-acid, decorative, easy to apply and clean, bacteriostatic epoxy grout. After grouting the tiles, trim the excess portions of **Mapesonic Strip** along the walls.

As an alternative, the grout lines may also be filled with cementitious mortar such as **Ultracolor Plus** or **Keracolor FF**.

It is very important that, when installing skirting boards around a room, they do not come into direct contact with the flooring, so the joint created between the skirting and the flooring must be sealed with **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.



4 RAPID INSTALLATION OF LARGE-FORMAT CERAMIC TILES OVER CRACKED FLOORS WITH AN UNCOUPLING ANTI-FRACTURE MEMBRANE

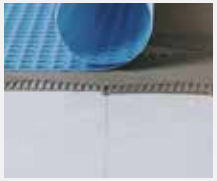
1. Existing cracked flooring
2. Adhesive **Keraquick Maxi S1**
3. Uncopuling anti-fracture membrane **Mapeguard UM 35**
4. Adhesive **Keraquick Maxi S1**
5. Large format ceramic tiles
6. Grout **Ultracolor Plus**
7. Sealant **Mapesil AC**

CHECKING AND PREPARING THE SUBSTRATE

Make sure the existing floor is firmly bonded to the substrate and flat and that there are no traces of grease, oil, wax, paint/varnish, etc. Any tiles that are detached and/or cracked must be removed. Thoroughly clean the flooring by washing it down with a specific product such as **UltraCare HD Cleaner** or by abrading it with a power tool. Where necessary, repair/reintegrate gaps after removing tiles with **Planitop Fast 330**.

APPLYING THE ISOLATING ANTI-FRACTURE MEMBRANE

Mapeguard UM 35 can be used to overcome the problem of old cracked flooring and enables new tiles to be installed without having to respect the position of existing distribution joints, thereby avoiding unsightly cuts in tiles, and to position joints according to the new layout or pattern. To apply **Mapeguard UM 35** use adhesive of minimum class C2 according to EN 12004 (such as **Ultralite S1 Flex Zero**, **Keraflex Maxi S1 Zero**, **Keraflex Extra S1 Zero**, **Keraflex Easy S1 Zero**). Press the membrane firmly onto the adhesive with a float or a **Mapeguard Roller**.



INSTALLING CERAMIC TILES

To install large format floor tiles rapidly it is possible to use the same adhesive as for the **Mapeguard UM 35** membrane, such as **Keraquick Maxi S1** rapid adhesive, using the double-buttering method. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has hardened, it is possible to proceed with grouting the joints with cementitious mortars such as **Ultracolor Plus** or **Keracolor FF**. The sealing of the joints can be carried out using a suitable elastic sealant such as **Mapesil AC**, after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

5 RAPID INSTALLATION OF LARGE-FORMAT CERAMIC TILES ON SCREEDS WITHOUT RESPECTING THE POSITION OF DISTRIBUTION JOINTS BY APPLYING AN UNCOUPLING ANTI-FRACTURE MEMBRANE

1. Concrete sublayer
2. Vapour barrier
3. Screed **Topcem Pronto**
4. Adhesive **Ultralite S1 Flex Quick**
5. Uncoupling anti-fracture membrane **Mapeguard UM 35**
6. Adhesive **Ultralite S1 Flex Quick**
7. Ceramic tiles
8. Grout **Ultracolor Plus**
9. Sealant **Mapesil AC**

CREATING THE UNBONDED CEMENTITIOUS SCREED

Place compressible polyethylene tape around the perimeter on the surface of the concrete and position a separation layer consisting of polyethylene sheets, for example. To make the screed apply a layer at least 40 mm thick of **Topcem Pronto**.

APPLYING THE UNCOUPLING ANTI-FRACTURE MEMBRANE.

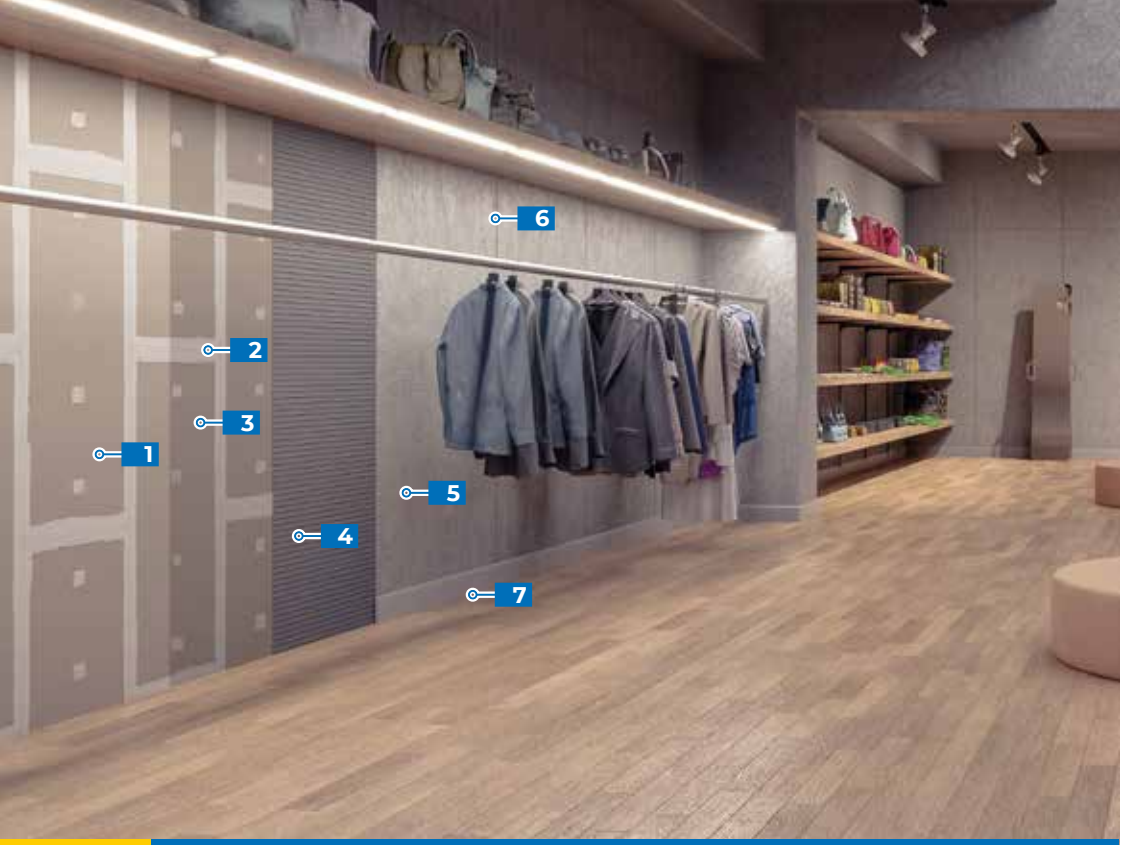
Mapeguard UM 35 enables new tiles to be installed without having to respect the position of existing distribution joints in the screed, thereby avoiding unsightly cuts in tiles, especially in the case of large format tiles, and to position joints according to the new layout or pattern. To apply **Mapeguard UM 35** use adhesive of minimum class C2 according to EN 12004 (such as **Keraquick Maxi S1**, **Ultralite S1 Flex Zero**, **Keraflex Maxi S1 Zero**, **Keraflex Extra S1 Zero**, **Keraflex Easy S1 Zero**). Press the membrane firmly onto the adhesive with a float or a **Mapeguard Roller**.

INSTALLING CERAMIC TILES

To install large format floor tiles it is possible use the same adhesive as for the **Mapeguard UM 35** membrane, such as **Ultralite S1 Flex**, or a rapid adhesive such as **Ultralite S1 Flex Quick**, using the double-buttering method. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with cementitious mortar such as **Ultracolor Plus** or **Keracolor FF**. Seal the joints with a suitable elastic sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.



6 INSTALLATION OF CERAMIC TILES ON INTERNAL PLASTERBOARD SURFACES

1. Plasterboard dividing walls
2. Skim-coat **Planitop 600 RasaGesso**
3. Primer **Eco Prim T Plus**
4. Adhesive **Ultralite S1 Flex Zero**
5. Ceramic tiles
6. Grout **Ultracolor Plus**
7. Sealant **Mapesil AC**

CHECKING AND PREPARING THE SUBSTRATE

Position the plasterboard panels by screwing them to the metal structure supporting the panels. Clean the panels with a soft cloth or a damp sponge to remove all dust and any other material or substance that could affect adhesion of the product to be applied.

Seal the joints between the panels (and the heads of the screws) with a skim coat of **Planitop 600 RasaGesso** to create a smooth, flat surface. If the tiles are to be installed with cementitious adhesive, prime the surface with **Primer G** or **Eco Prim T Plus** (no need to prime the surface if dispersion adhesive is being used).

INSTALLING CERAMIC TILES

Install the ceramic tiles with class C2 or C2S1 cementitious adhesive such as **Keraflex**, **Keraflex Maxi S1 Zero** or **Ultralite S1 Flex Zero**, according to the type and format of the tiles. For small format tiles dispersion adhesive may be used, such as **Ultramastic III**. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with cementitious mortar such as **Ultracolor Plus** or **Keracolor FF**. Seal the joints with a suitable elastic sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

7 INSTALLATION OF NATURAL STONE ON A HEATED SCREED WITH A LAYER OF SOUNDPROOFING ON UNCOUPLING ANTI-FRACTURE MEMBRANE

1. Concrete sublayer
2. Vapour barrier
3. Soundproofing membrane **Mapesilent Roll**
4. Soundproofing strip **Mapesilent Band R**
5. Soundproofing tape **Mapesilent Tape**
6. Heating system
7. Cementitious screed **Topcem Pronto**
8. Adhesive **Keraquick Maxi S1**
9. Uncoupling anti-fracture membrane **Mapeguard UM 35**
10. Adhesive **Keraquick Maxi S1**
11. White Carrara marble
12. Grout **Ultracolor Plus**
13. Sealant **Mapesil LM**

INSTALLING THE UNDER SCREED SOUNDPROOFING

On the dry substrate, and after applying a vapour barrier, roll out **Mapesilent Roll** on the surface and seal the overlaps between the sheets with **Mapesilent Tape** soundproofing tape. Apply **Mapesilent Band R** along the bottom of the perimeter walls and around elements passing through the screed and seal the joints with **Mapesilent Tape**.

CREATING THE HEATED SCREED

After positioning the heating/cooling system make the heated screed using **Topcem Pronto**, ramming the mix around the pipework where the water in the heating/cooling system flows. The thickness of screed above the heating coils must be at least 3 cm. Place metal reinforcement mesh at the mid-point of the screed so that stresses and loads are distributed evenly or add structural fibres to the mortar, such as **Mapefibre ST 30**. Wait until the screed is fully cured and switch the heating/cooling system on for the first time according to the cycle described in EN 1264-4.

APPLYING THE UNCOUPLING ANTI-FRACTURE MEMBRANE.

Apply and bond the **Mapeguard UM 35** membrane using improved adhesive of at least class C2 according to EN 12004 or ISO13007- 1 (such as **Keraquick Maxi S1**, **Ultralite S1 Flex Zero**, **Keraflex Maxi S1 Zero**, **Keraflex Extra S1 Zero** or **Keraflex Easy S1 Zero**). Press the membrane down firmly onto the adhesive with a float or **Mapeguard Roller**. **Mapeguard UM 35** gives the following: control of any residual moisture in the screed and its elimination thanks to the air channels on the back of the membrane, thereby accelerating installation times; even heat distribution in heated screeds; the possibility of not having to trace the position of distribution joints in the screed in the final flooring.

INSTALLING NATURAL STONE FLOORING

Install natural stone flooring on the **Mapeguard UM 35** membrane with a suitable cementitious adhesive of minimum class C2 according to EN 12004 and in compliance with the indications in UNI 11714-1, such as **Keraquick Maxi S1**, applied using the double-buttering method. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with cementitious mortar such as **Ultracolor Plus** or **Keracolor FF**. After filling the grout lines trim the excess portions of the **Mapesilent Band R strip**. Seal the joints and skirting boards using a suitable sealant. Apply **Mapesil LM** sealant if necessary, then apply **UltraCare Smooth Silicone** for surface finishing. Make sure that the skirting board is not in direct contact with the flooring in order to guarantee the acoustic performance of the system.

8 INSTALLATION OF CERAMIC TILES ON UNDERFLOOR THIN HEATING SYSTEM ON UNCOUPLING ANTI-FRACTURE MEMBRANE

1. Existing ceramic flooring
2. Filler mortar to reintegrate removed tiles **Planitop Fast 330**
3. Primer **Eco Prim T Plus**
4. Thin heating system
5. Self-levelling skim coat **Novoplan Maxi**
6. Adhesive **Ultralite S1 Flex Zero**
7. Uncoupling anti-fracture membrane **Mapeguard UM 35**
8. Adhesive **Ultralite S1 Flex Zero**
9. Porcelain tiles
10. Grout **Ultracolor Plus**
11. Sealant **Mapesil AC**

CREATING THE COMPACT HEATED SCREED

Make sure the existing floor is firmly bonded to the substrate and flat and that there are no traces of grease, oil, wax, paint/varnish, etc. Detached and/or cracked tiles must be removed. Thoroughly clean the flooring by washing it down with a specific product such as **UltraCare HD Cleaner** or by abrading it with a power tool. Where required, repair and fill gaps created where tiles have been removed with **Planitop Fast 330**. After applying **Eco Prim T Plus** primer, install the compact heating system and then skim over the surface with high thermal conductivity **Novoplan Maxi**. After 4 days, switch the heating/cooling system on for the first time according to the cycle described in EN 1264-4.

APPLYING THE UNCOUPLING ANTI-FRACTURE MEMBRANE.

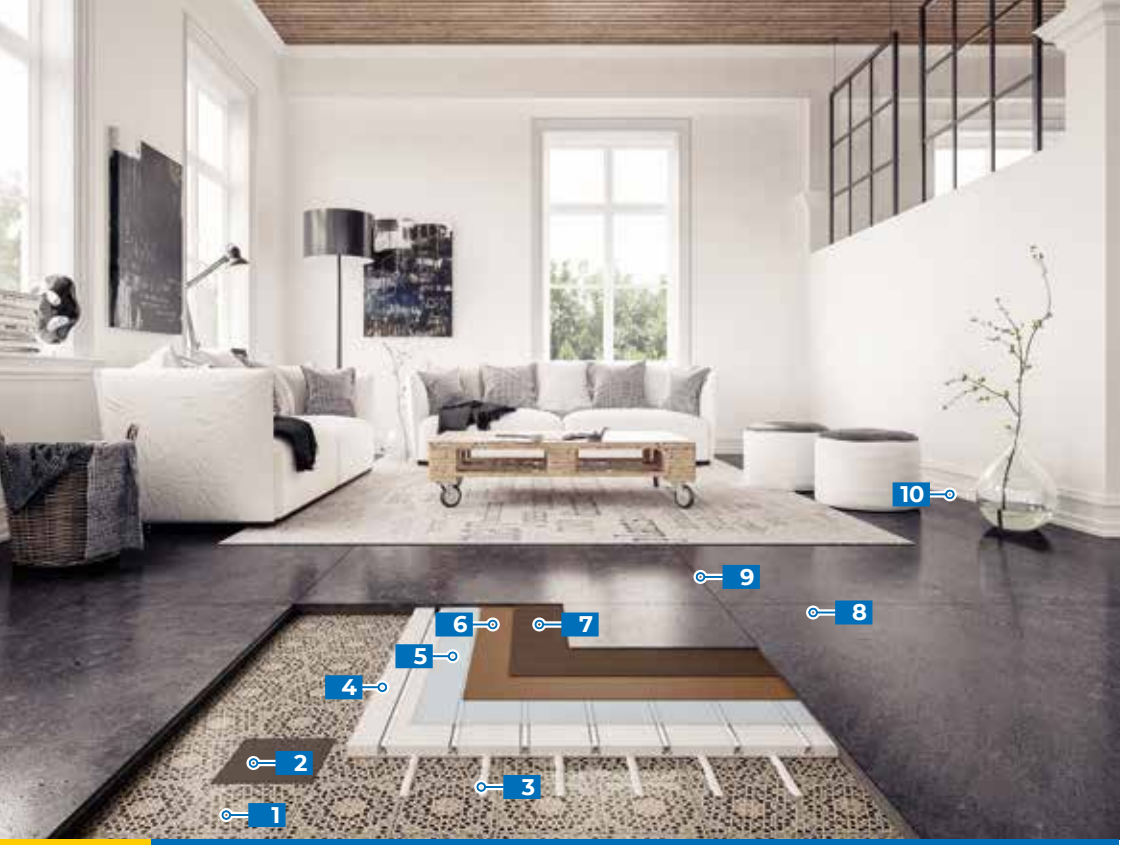
Apply and bond the **Mapeguard UM 35** membrane using improved adhesive of at least class C2 according to EN 12004 or ISO13007- 1 (such as **Keraquick Maxi S1**, **Ultralite S1 Flex Zero**, **Keraflex Maxi S1 Zero**, **Keraflex Extra S1 Zero** or **Keraflex Easy S1 Zero**). Press the membrane down firmly onto the adhesive with a float or **Mapeguard Roller**. **Mapeguard UM 35** gives the following: control of any residual moisture in the screed and its elimination thanks to the air channels on the back of the membrane, thereby accelerating installation times; even heat distribution in heated screeds; the possibility of not having to trace the position of distribution joints in the screed in the final flooring.

INSTALLING CERAMIC TILES

Install the ceramic tiles with a suitable cementitious adhesive of minimum class C2 and deformability class S1 such as **Ultralite S1 Flex Zero**, applied using the double-buttering method. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set fill the grout lines, which should be dimensioned to cushion and allow for any thermal deformations induced by the heating system. **Ultracolor Plus** or, as an alternative, **Keracolor FF** may be used in this case. Seal the distribution joints, positioned according to design specifications, with a suitable sealant such as **Mapesil AC** or **Mapeflex PU 45 FT** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.



9 INSTALLATION OF CERAMIC TILES ON UNDERFLOOR THIN HEATING SYSTEM MADE FROM GYPSUM FIBRE OR CEMENT FIBRE BOARDS

1. Existing ceramic flooring
2. Filler mortar to reintegrate removed tiles **Planitop Fast 330**
3. Sealant (applied in beads) **Ultrabond MS Rapid**
4. Compact heating system
5. Primer **Eco Prim T Plus**
6. Adhesive (first coat) **Keraquick Maxi S1**
7. Adhesive (second coat) **Keraquick Maxi S1**
8. Ceramic tiles
9. Grout **Ultracolor Plus**
10. Sealant **Mapesil AC**

CHECKING AND PREPARING THE SUBSTRATE

Make sure the existing floor is firmly bonded to the substrate and flat and that there are no traces of grease, oil, wax, paint/varnish, etc. Detached and/or cracked tiles must be removed. Thoroughly clean the flooring by washing it down with a specific product such as **UltraCare HD Cleaner** or by abrading it with a power tool. Where necessary, repair/reintegrate gaps after removing tiles with **Planitop Fast 330**.

INSTALLING THE COMPACT HEATING SYSTEM

Install the heating system by bonding the cement fibre or gypsum fibre panels to the existing substrate with **Ultrabond MS Rapid** applied in beads every 20-30 cm and check the watertightness of the pipework according to EN-1264. Prime the surface of the panels with **Eco Prim T Plus**.

INSTALLING CERAMIC TILES

Once the primer is dry (2-4 hours) install the ceramic tiles directly on the panels with cementitious adhesive of minimum class C2 and deformability class S1, such as **Keraquick Maxi S1**, using the double-buttering method. Apply a first layer of adhesive using the smooth edge of a trowel to fill the cavities in the panel/pipework and then a second layer with a notched trowel suitable for the type and format of the ceramic tiles.

To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set fill the grout lines, which should be dimensioned to cushion and allow for any thermal deformations induced by the heating system. **Ultracolor Plus** or, as an alternative, **Keracolor FF** may be used in this case. Seal the distribution joints, positioned according to design specifications, with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

10 WATERPROOFING AND INSTALLATION OF CERAMIC TILES IN BATHROOMS AND DAMP ENVIRONMENTS

1. Concrete sublayer
2. Isolating layer
3. Screed **Topcem Pronto**
4. Ready-mixed waterproofing product **Mapegum WPS** (2 coats)
5. Adhesive **Keraflex**
6. Ceramic tiles
7. Grout **Kerapoxy Easy Design**
8. Sealant **Mapesil AC**
9. Rubber-backed tape **Mapeband PE 120**
10. Plasterboard
11. Ready-mixed waterproofing product **Mapegum WPS** (2 coats)
12. Adhesive **Ultramastic III**
13. Ceramic tiles
14. Grout **Keracolor FF**
15. Sealant **Mapesil Z Plus**

CREATING THE UNBONDED CEMENTITIOUS SCREED

Place compressible polyethylene tape around the perimeter on the surface of the concrete and position a separation layer consisting of polyethylene sheets, for example. To make the screed apply a layer at least 40 mm thick of **Topcem Pronto**.

WATERPROOFING

After preparing the substrate as specified, apply two criss-cross coats of **Mapegum WPS** with a trowel, roller or brush to form a thick, elastic, seamless film. Waterproof the fillet joints between horizontal/vertical surfaces and the joints with an elastic waterproofing product such as **Mapeband PE 120**. **Mapegum WPS** may also be applied on walls if the surface has been correctly prepared.

INSTALLING CERAMIC TILES

Once the **Mapegum WPS** is dry, the floor or wall tiles may be installed using cementitious adhesive such as **Keraflex** or **Keraquick Maxi S1** in the case of rapid adhesive, according to the type and format of the tiles. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with **Kerapoxy Easy Design** anti-acid, decorative, easy to apply and clean, bacteriostatic epoxy grout; add **MapeGlitter** or **Mapecolor Metallic** if required to the grout to create particular decorative effects. As an alternative, use **Ultracolor Plus** mould-resistant, water-repellent cementitious grout.

The joints, changes in slope, corners and edges can then be sealed with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam**. Seal fillet joints between bathroom fittings and tiling, shower enclosures, etc. with an elastic sealant such as **Mapesil Z Plus**.

11 WATERPROOFING AND INSTALLING CERAMIC TILES OVER EXISTING FLOORING IN SHOWER ENCLOSURES, BATHROOMS AND CHANGING ROOMS

1. Old tiling
2. Primer **Eco Prim Grip Plus**
3. Smoothing compound **Nivorapid**
4. Waterproofing product **Mapegum WPS** (2 coats)
5. Floor drain **Drain Vertical**
6. Rubber-backed tape **Mapeband PE 12**
7. Adhesive **Keraflex Maxi S1 Zero**
8. Porcelain tiles
9. Grout **Kerapoxy Easy Design**
10. Sealant **Mapesil AC**
11. Smoothing compound **Nivoplan** + **Planicrete**
12. Skim-coat **Planitop 560**
13. Primer **Silancolor Primer Plus**
14. Dressing/coating **Silancolor Paint Plus**
15. Adhesive **Adesilex P10** + **Isolastic**
16. Glass mosaic tiles
17. Grout **Kerapoxy Easy Design**

LEVELLING OFF AND PREPARING THE SUBSTRATE

Check the condition of the flooring and, after cleaning it thoroughly, level off the installation surface with **Nivorapid** cementitious smoothing compound after applying a coat of **Eco Prim Grip Plus** adhesion promoter.

WATERPROOFING

After preparing the substrate as specified, apply two criss-cross coats of **Mapegum WPS** with a trowel, roller, brush or by spray to form a thick, elastic, seamless film. Waterproof the fillets between the horizontal/vertical surfaces with **Mapeband PE 120** and install a floor drain using a **Drain Vertical/Lateral kit**. To install showers flush with the floor use Profilpas bathroom systems such as **PP Drain Aqua** channels or an item from the **Q-Drain** range which need to be positioned prior to waterproofing.

INSTALLING CERAMIC FLOOR TILES AND MOSAIC WALL DRESSING

For floor-level showers, use a **Mapei** adhesive of at least class C2 according to EN 12004 to apply **Profilpas Glass Profiles** for the insertion of glass walls and the finishing of the shower surface, designed to compensate the 2% slope. Install porcelain tiles using a cementitious adhesive such as **Keraflex Maxi S1 Zero**, and in all cases according to the type and format of the tiles. Use **Adesilex P10** cementitious adhesive mixed with **Isolastic** latex diluted 1:1 with water to install mosaic tiles on walls. Use a levelling system from the **MapeLevel** range to maintain the correct width for the grout lines and prevent lippage between adjacent tiles.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with **Kerapoxy Easy Design** anti-acid, decorative, easy to apply and clean, bacteriostatic epoxy grout; add **MapeGlitter** or **Mapecolor Metallic** if required to the grout to create particular decorative effects. The joints, changes in slope, corners and edges can then be sealed with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

12 WATERPROOFING AND INSTALLATION OF CERAMIC TILES OR MOSAIC IN DAMP ENVIRONMENTS SUCH AS WELLNESS AND SPA CENTRES

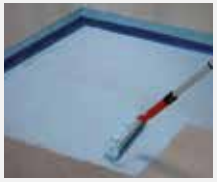
1. Concrete structure
2. Vapour barrier
3. Screed (floor) **Topcem Pronto**
4. Skim coat (wall) **Planitop Fast 330**
5. Waterproofing **Mapelastic Aquadefence**
6. Rubber-backed tape **Mapeband**
7. Adhesive **Ultralite S1 Flex Zero**
8. Tiling
9. Grout **Kerapoxy Easy Design**
10. Sealant **Mapesil AC**

CREATING THE UNBONDED CEMENTITIOUS SCREED

Place compressible polyethylene tape around the perimeter on the surface of the concrete and position a separation layer consisting of polyethylene sheets, for example. To make the screed apply a layer at least 40 mm thick of **Topcem Pronto**. Level off the vertical surfaces with a skim-coat of **Planitop Fast 330**.

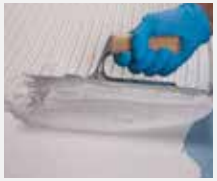
WATERPROOFING

After preparing the substrate as specified, for surfaces not constantly immersed in water, apply two criss-cross coats of **Mapelastic Aquadefense** with a trowel, long-pile roller or brush to form a thick, elastic, seamless film. Waterproof the fillets between the horizontal/vertical surfaces and the joints with **Mapeband**.



INSTALLING CERAMIC TILES OR MOSAIC

Install the porcelain tiles or mosaic with cementitious adhesive according to the type and format of the tiles such as **Ultralite S1 Flex Zero**, which stands out for its high white balance and particularly suitable, therefore, for installing glass mosaics. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.



GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with **Kerapoxy Easy Design** anti-acid, decorative, easy to apply and clean, bacteriostatic epoxy grout; add **MapeGlitter** or **Mapecolor Metallic** if required to the grout to create particular decorative effects. The joints, corners and edges can then be sealed with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

13 INSTALLATION OF CERAMIC IN FLOOR-LEVEL SHOWERS ON WATERPROOFING AND ANTI-FRACTURE MEMBRANE

1. Cementitious screed **Topcem Pronto**
2. Alkali-resistant, anti-fracture waterproofing membrane, bonded with adhesive of at least class C2, according to EN 12004 **Mapeguard WP 200**
3. **Mapeguard WP Adhesive**
4. **PP Drain Aqua Profilpas** shower drains
5. Waterproofing strip **Mapeguard ST**
6. Waterproofing for internal edge/corner **Mapeguard IC**
7. Corner for waterproofing elements at different heights **Mapeguard DH-R**
8. 13 **Ultralite S1 Flex Zero** adhesive
9. Profile to finish off sloping surfaces in showers **Glass Profile GPS4 Profilpas**
10. Profile to finish off sloping surfaces in showers **Glass Profile GPS5 Profilpas**
11. Sloping profile to house glass shower screens **Glass Profile GPS1 Profilpas**
12. Profile to house glass shower screens **Glass Profile GPS2 Profilpas**
14. Porcelain tiles
15. Epoxy grout **Kerapoxy Easy Design**
16. Elastic sealant **Mapesil AC**

INSTALLING THE SHOWER DRAINS

Define the height of the finished floor, taking into account the slope to drain off water. Position the shower drain (such as a **PP Drain Aqua** by **Profilpas**) and connect it to the drain with a length of push-fit pipe of a suitable diameter. Once the pipe has been fitted test for watertightness.

CREATING THE CEMENTITIOUS SCREED

Create a screed with a 2% slope using **Topcem Pronto** and level it off flush with the top of the drain flange.

MAPEGUARD WP WATERPROOFING SYSTEM

Cut the **Mapeguard WP 200** membrane to size before bonding it to the substrate with a **Mapei** adhesive of class C2 according to EN 12004 (such as **Adesilex P9**, **Keraflex Extra S1 Zero**, **Ultralite S1 Flex Zero**, **Keraquick Maxi S1** or a similar product). Apply the membrane on the fresh adhesive and press down evenly with a roller, working from the centre to the edges. Waterproof the internal and external corners with **Mapeguard IC** and **Mapeguard EC**. Waterproof the corners between the different levels with **Mapeguard DH-R /Mapeguard DH-L**. Seal the pipework and drains passing through the substrate with **Mapeguard PC** gaskets. Seal all the edges between the walls and floor, adjacent walls, the different levels and the joints between adjacent pieces of membrane with **Mapeguard ST**. Use **Mapeguard WP Adhesive** to bond all the waterproofing accessory items to the membrane.

INSTALLING THE SHOWER PROFILES

Use a **Mapei** adhesive of at least class C2 according to EN 12004 to apply the shower profiles that house the glass screens (such as **Glass Profile GPS1** and **Glass Profile GPS2** by **Profilpas**) and the profiles to finish off the sloping floor (such as Glass **Profile GPS4**, **Glass Profile GPS5** and **Glass Profile GPS3** by **Profilpas**), which are used to cover the 2% slope.

INSTALLATION OF CERAMIC OR STONE TILING

It is now possible to proceed directly with the tiling.

To install the tiling use a **Mapei** cementitious adhesive of at least class C2 according to the type and format of the tiling. Leave a gap of around 2 to 4 mm between the tiles and the frame/cover of the shower drain. Use a levelling system from the **MapeLevel** range to maintain the correct width for the grout lines and prevent lippage between adjacent tiles.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with **Kerapoxy Easy Design** anti-acid, decorative, easy to apply and clean, bacteriostatic epoxy grout; add **MapeGlitter** or **Mapecolor Metallic** if required to the grout to create particular decorative effects. The joints corners and edges can then be sealed with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

14 INSTALLATION OF CERAMIC TILES IN DAMP ENVIRONMENTS ON MULTIPURPOSE WATERPROOF PANELS

1. Masonry
2. Installation of **Mapeguard Board** multipurpose panels with beads and spots of **Ultralite S1 Flex Zero** adhesive
3. Adhesive **Ultralite S1 Flex Zero**
4. Porcelain tiles
5. Grout **Kerapoxy Easy Design**
6. Degraded render
7. Old tiles
8. Adhesive **Ultralite S1 Flex Zero**
9. Multipurpose waterproof panel **Mapeguard Board**
10. **Mapeguard Board** multipurpose waterproof panel assembled with **Mapeflex MS45** hybrid sealant and **Ultralite S1 Flex Zero** adhesive
11. Adhesive **Mapeguard WP Adhesive**
12. Strip **Mapeguard ST**
13. **Mapeguard Board** multipurpose waterproof panel assembled with **Mapeflex MS45** hybrid sealant

CREATING ROOM DIVIDERS, WALL LININGS AND FURNISHING ELEMENTS

Use **Mapeguard Board** multipurpose panels for the following:

- levelling off walls out of plumb, including to completely replace plaster;
- levelling off existing surfaces (degraded/damaged render or old tiling);
- creating furnishing elements such as washbasin surrounds and sanitary ware enclosures;
- creating room dividers, shower walls, seats, benches and shelves;
- surrounds for bath tubs;
- waterproofing surfaces before tiling.

*Application and assembly procedure for **Mapeguard Board**: page 39*

INSTALLING THE TILING MATERIAL

The surface of the panels assembled as described above, which are water-resistant and perfectly flat, can receive any type of ceramic tile, mosaic or stone material suitable for the specific area of use. To install the dressing material, use a **Mapei** cementitious adhesive of minimum class C2 according to the type of dressing material. Use a levelling system from the **MapeLevel** range to maintain the correct width for the grout lines and prevent lippage between adjacent tiles.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with **Kerapoxy Easy Design** anti-acid, decorative, easy to apply and clean, bacteriostatic epoxy grout; add **MapeGlitter** or **Mapecolor Metallic** if required to the grout to create particular decorative effects. The joints, changes in slope, corners and edges can then be sealed with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

15 INSTALLATION OF CERAMIC TILES, INCLUDING LARGE-FORMATS, ON RENDERED FACADES

1. Render
   MapeWall Render & Strengthen
2. Adhesive **Ultralite S2 Flex**
3. Ceramic tiles
4. Grout **Ultracolor Plus**
5. Sealant around window and stringcourse **Mapesil LM**

CHECKING AND PREPARING THE SUBSTRATE

Render must be clean, well cured, dry, flat and sound and have sufficient pull-off strength. To create new render use **MapeWall Render & Strengthen** with metal mesh fastened to the load-bearing substrate and embedded in the render. For existing render, areas at risk of becoming detached may be repaired with **MapeWall Render & Strengthen**. The pull-off strength of the render must be at least 1 N/mm².

INSTALLING CERAMIC TILES

To bond tiles on façades, particularly large format or thin tiles, it is very important to use deformable adhesive (class S1 or S2 according to UNI EN 12004) such as **Ultralite S2 Flex** applied using the double-buttering method so there are no voids on the back of the tiles. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Fill grout lines (minimum width 5 mm) with **Ultracolor Plus** rapid-setting and hardening, anti-efflorescence, water-repellent cementitious mortar. Seal all corners, edges and expansion joints (dimensioned according to the pitch of the tiles) using a suitable product with low modulus of elasticity and low dirt pick-up, such as **Mapesil LM**, after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

16 INSTALLING CERAMIC TILES ON FACADES WITH A MAPETHERM TILE SYSTEM XL EXTERNAL THERMAL INSULATION SYSTEM

1. Render **Intomap R2 Fibro**
2. Adhesive for insulating panels **Mapetherm AR1 GG**
3. Thermal insulation panel
4. Structural render (1st coat) **Planitop HDM Maxi**
5. Reinforcing mesh **Mapegrid G 120**
6. Anchor **Mapetherm Tile - Ejot SDF-S Plus Ø 8 UB + Mapetherm Tile - Ejot SBV-P 8/90 K**
7. Structural render (2nd coat) **Planitop HDM Maxi**
8. Adhesive for tiles **Ultralite S2 Flex**
9. All types of tile
10. Grout **Ultracolor Plus**
11. Sealant **Mapesil LM**

CHECKING AND PREPARING THE SUBSTRATE

Make sure the substrate is sufficiently clean, well cured, dry, flat and sound and has sufficient pull-off strength (1 N/mm²). If the masonry is not sufficiently flat or out of plumb, level off the surface with a layer of **Intomap R2 Fibro** render.

INSTALLING THE THERMAL INSULATING PANELS

Position **Mapetherm-Ejot Pro BSOP** support profiles on the wall with added **Mapetherm-Ejot Pro SOP** PVC closure profiles. Install the thermal insulating panels (in EPS, EPS with graphite or mineral rockwool) with **Mapetherm AR1 GG** cementitious adhesive applied using the double-buttering technique (applied evenly on the back of the panels and on the substrate). For other types of thermal insulating panel, please contact **Mapei** Technical Services. When installing the panels follow the position of existing "structural" joints and protect them with **Mapetherm-Ejot DFPCO-E** profiles in the case of flat joints, or with **Mapetherm-Ejot DFPCO-V** profiles for corner joints. Use **Mapetherm-Ejot Pro GEW** profiles around edges and door and window openings. Always insert **Mapefoam** beforehand between interconnecting joints in the insulating system and other parts of the building (window ledges, window frames and openings in general) and seal them with **Mapeflex AC4**.

STRUCTURAL RENDER

Once the adhesive has set, apply a layer of structural render made from **Planitop HDM** Maxi two-component, fibre-reinforced mortar. Apply the mortar in two coats to form a total thickness of around 8-10 mm. While the first coat of render is still wet, embed **Mapegrid G 120** alkali-resistant glass fibre mesh in the mortar. Fasten the insulating panels to the substrate with anchors, such as **Mapetherm Tile- Ejot SDF-S Plus Ø 8 UB** and **Mapetherm Tile-Ejot SBV-P 8/90 K** washers. Insert the anchors until the washers are sitting against the mesh. To calculate the number and length of anchors required please contact **Mapei** Technical Services.

INSTALLING LARGE FORMAT PORCELAIN TILES, INCLUDING THIN TILES

System for creating external thermal insulation systems tiling with thin porcelain tiles up to 100x150 cm or traditional thickness ceramic tiles (8-10 mm thick) up to 60x120 cm. These types of tiles should be installed using highly deformable adhesive (class S2 according to EN 12004) such as **Ultralite S2 Flex**, applied using the double-buttering method. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Grout lines must be at least 5 mm wide and may be filled with a cementitious product such as **Ultracolor Plus**. Seal all corners, edges and expansion joints (dimensioned according to the pitch of the tiles) using a suitable product with low modulus of elasticity and low dirt pick-up, such as **Mapesil LM**, after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

17 INSTALLATION OF CERAMIC TILES ON FACADES WITH A MAPETHERM TILE SYSTEM S EXTERNAL THERMAL INSULATION SYSTEM

1. Render **Intomap R2 Fibro**
2. Adhesive for insulating panels **Mapetherm AR1 GG**
3. Thermal insulation panel
4. Reinforced smoothing compound (1st coat) **Mapetherm AR1**
5. Glass fibre mesh **Mapetherm Net**
6. Anchor **Mapetherm Tile - Ejot SDF-S Plus Ø 8 UB + Mapetherm Tile - Ejot SBV-P 8/90**
7. Reinforced smoothing compound (2nd coat) **Mapetherm AR1**
8. Adhesive for tiles **Keraflex Maxi S1 Zero** / **Ultralite S1 Flex Zero**
9. Small-format/clinker tiles
10. Grout **Ultracolor Plus** / **MapeWall Muratura Fine**
11. Sealant **Mapesil LM**

CHECKING AND PREPARING THE SUBSTRATE

Make sure the substrate is sufficiently clean, well cured, dry, flat and sound and has sufficient pull-off strength (1 N/mm²). If the masonry is not sufficiently flat or out of plumb, level off the surface with a layer of **Intomap R2 Fibro** render.

INSTALLING THE THERMAL INSULATING PANELS

Position **Mapetherm-Ejot Pro BSOP** support profiles on the wall with added **Mapetherm-Ejot Pro SOP** PVC closure profiles. Install the thermal insulating panels (in EPS or EPS with graphite) with **Mapetherm AR1 GG** cementitious adhesive applied using the double-buttering method (applied evenly on the back of the panels and on the substrate). For other types of thermal insulating panel, please contact **Mapei** Technical Services. When installing the panels follow the position of existing "structural" joints and protect them with **Mapetherm-Ejot DFPCO-E** profiles in the case of flat joints, or with **Mapetherm-Ejot DFPCO-V** profiles for corner joints. Use **Mapetherm-Ejot Pro GEW** profiles around edges and door and window openings. Always insert Mapefoam beforehand between interconnecting joints in the insulating system and other parts of the building (window ledges, window frames and openings in general) and seal them with **Mapeflex AC4**.

REINFORCED RENDER

Once the adhesive has set, skim the surface with **Mapetherm AR1** one-component cementitious mortar for bonding and skimming thermal insulating panels. Apply the mortar in two coats to form a total thickness of 5-6 mm. While the first skim-coat is still wet, embed **Mapetherm Net** glass fibre reinforcing mesh treated with special alkali-resistant primer in the mortar. Alternatively, use **Mapenet 150** mesh. Fasten the insulating panels to the substrate with anchors, such as **Mapetherm Tile - Ejot SDF-S Plus Ø 8 UB** and **Mapetherm Tile - Ejot SBV-P 8/90 K** washers. Insert the anchors until the washers are sitting against the mesh. To calculate the number and length of anchors required please contact **Mapei** Technical Services.

INSTALLING SMALL BRICK, CERAMIC AND PORCELAIN TILES

System for creating external thermal insulation systems tiling with small brick, ceramic and porcelain tiles (5.5 x 25 x 1-1.5 cm thick) and porcelain tiles up to 30 x 60 cm x 8-10 mm thick. These types of tiles should be installed using deformable adhesive (class C2S1 or C2S2 according to EN 12004 according to the format and type of tile) such as **Keraflex Maxi S1 Zero**, **Ultralite S1 Flex Zero**, **Ultralite S2 Flex** or, if necessary, rapid-set adhesive such as **Ultralite S1 Quick** and **Ultralite S2 Quick**. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Grout lines must be at least 5 mm wide and may be filled with a cementitious product such as **Ultracolor Plus** for porcelain and clinker tiles and **Mape-Antique Allettamento** or **MapeWall Muratura Fine** for brick tiles. Seal all corners, edges and expansion joints (dimensioned according to the pitch of the tiles) using a product with low modulus of elasticity and low dirt pick-up, such as **Mapesil LM**.

18 INSTALLATION OF CERAMIC TILES ON FIBRE CEMENT PANELS ON FACADES

1 Concrete wall

2 Adhesive

3 Thermal insulation panel

4 Vapour barrier

5 Cement fibre panel

6-7 Reinforced skim-coat **Monofinish** + **Mapenet 150**

8 Adhesive **Ultralite S2 Flex**

9 Ceramic tiles

10 Grout **Ultracolor Plus**

11 Sealant **Mapesil LM**

CHECKING AND PREPARING THE SUBSTRATE

Verify the suitability of the substrate and check the stability and rigidity of the "dry" structure, consisting of a metal structure with cement fibre panels attached to the structure with fasteners.

Clean the substrate with a soft cloth or damp sponge to remove all traces of dust, dirt and any other material or substance that could affect adhesion of the next product.

Skim the panels with **Monofinish** applied in two layers with a smooth trowel (total thickness of the two layers around 3-4 mm) or **Mapefinish**. Embed **Mapenet 150** alkali-resistant glass fibre mesh between the first and second layer in correspondence with the joints between the panels.

INSTALLING CERAMIC TILES

To bond tiles on façades, particularly large format or thin tiles, it is very important to use deformable adhesive (class S1 or S2 according to UNI EN 12004) such as **Ultralite S2 Flex** applied using the double-buttering technique so there are no voids on the back of the tiles. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Fill the grout lines (minimum width 5 mm) with **Ultracolor Plus** rapid-setting and hardening, anti-efflorescence, water-repellent cementitious mortar.

Seal all corners, edges and expansion joints (dimensioned according to the pitch of the tiles) using a suitable product with low modulus of elasticity and low dirt pick-up, such as **Mapesil LM**, after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

19 RAPID WATERPROOFING AND INSTALLATION OF CERAMIC TILES ON BALCONIES AND TERRACES

1. Concrete
2. Bonding slurry **Planicrete**
3. Screed **Topcem Pronto**
4. Cementitious waterproofer (2 coats) **Mapelastic Turbo**
5. Glass fibre mesh **Mapenet 150**
6. Rubber-backed tape **Mapeband Easy**
7. Wall drain **Drain Front**
8. Epoxy adhesive **Adesilex PG4** broadcast with **Quartz 0.5**
9. Adhesive **Keraquick Maxi S1**
10. Ceramic tiles
11. Grout **Ultracolor Plus**
12. Sealant **Mapesil AC**

CREATING THE BONDED SCREED

If a screed less than 4 cm thick needs to be made, it is important to apply **Topcem Pronto** so that it bonds to the substrate over a wet coat of epoxy resin such as **Eporip** or cementitious bonding slurry made from **Planicrete**, water and cement at a ratio of 1:1:3.

WATERPROOFING

Apply **Mapelastic Turbo** waterproofer on the dry, cured screed. Apply two coats of product with alkali-resistant reinforcing mesh (such as **Mapenet 150**) between the two coats to form a total thickness of at least 2 mm. Waterproof the fillets between the horizontal/vertical surfaces and the joints with **Mapeband Easy**. Install the wall drain using a **Drain Front** kit sanded down to roughen the surface prior to embedding it in two layers of **Adesilex PG4**.

INSTALLING CERAMIC TILES

"Rapid" installation of the tiles may be carried out using rapid-setting, deformable cementitious adhesive such as **Elastorapid**, **Keraquick Maxi S1** or **Ultralite S1 Flex Quick**. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel range** levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with Ultracolor Plus rapid-setting and hardening, anti-efflorescence, water-repellent grout. The joints, changes in slope, corners and edges can then be sealed with a suitable elastic sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

20 WATERPROOFING AND INSTALLATION OF CERAMIC TILES ON BALCONIES AND TERRACES ON EXISTING FLOOR

1. Existing ceramic tiles
2. Skim-coat **Adesilex P4**
3. Waterproofing **Mapelastic**
4. Glass fibre mesh **Mapenet 150**
5. Rubber-backed tape **Mapeband Easy**
6. Floor drain **Drain Vertical**
7. Adhesive **Keraflex Maxi S1 Zero**
8. Ceramic tiles
9. Grout **Ultracolor Plus**
10. Sealant **Mapesil AC**

LEVELLING OFF AND PREPARING THE SUBSTRATE

To recreate the correct slope, clean the existing flooring with a suitable detergent/degreaser such as **UltraCare HD Cleaner**, or abrade the surface with a power tool, and apply a skim-coat of **Adesilex P4**. Use **Planitop Fast 330** to fill hollows, gaps and voids after removing tiles at risk of becoming detached. Remove the skirting and the render behind the skirting down to a depth of at least 1.5 cm and fill and level off the channel created with **Planitop Fast 330**.

WATERPROOFING

Apply two coats of **Mapelastic Zero** with a metal trowel over the skim/smoothing layer to form a layer at least 2 mm thick. Reinforce the waterproofing layer by placing **Mapenet 150** alkali-resistant glass fibre mesh between the two coats of waterproofing product. Waterproof the fillets between horizontal/vertical surfaces and the joints with **Mapeband Easy**. Install a floor drain using a **Drain Vertical/Lateral** kit. For applications at low temperatures and on damp substrates, if fully cured, it is recommended to use **Mapelastic Turbo** waterproofer.

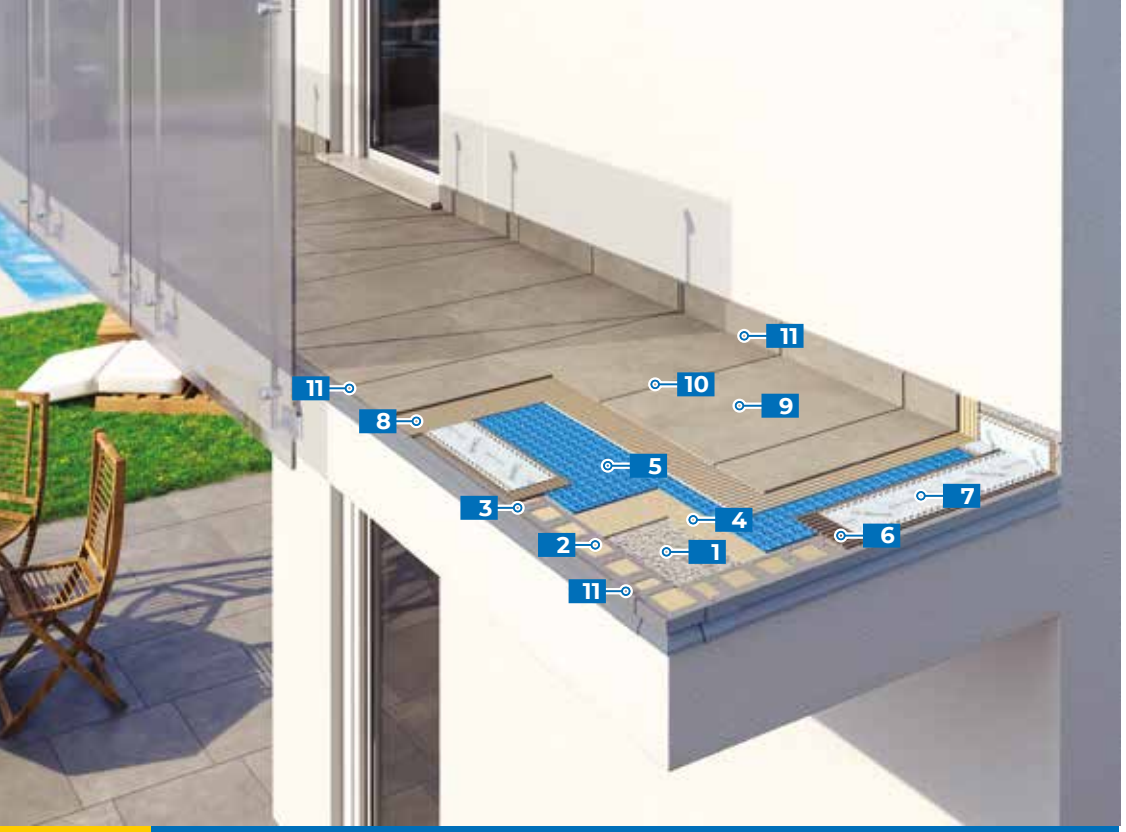
INSTALLING CERAMIC TILES

Install the tiles using adhesive with sufficient deformability (compatible with the elastic layer of **Mapelastic**) such as **Keraflex Maxi S1 Zero**. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel range** levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with a cementitious product such as **Ultracolor Plus** or, as an alternative, **Keracolor GG** mixed with **Fugolastic** polymer additive.

Joints, corners and edges can then be sealed with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with Mapefoam. If there are stone sills present, seal the expansion joints with **Mapesil LM** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.



21 WATERPROOFING AND INSTALLATION OF CERAMIC TILES ON TERRACES AND BALCONIES WITH AN UNCOUPLING, ANTI-FRACTURE AND WATERPROOFING MEMBRANE

1. Cementitious screed **Topcem Pronto**
2. Adhesive **Keraflex Maxi S1 Zero**
3. Edging profile for balconies and terraces **Protec CPGV Profilpas**
4. Adhesive **Keraflex Maxi S1 Zero**
5. Uncoupling, anti-fracture and waterproofing membrane **Mapeguard UM 35**
6. Adhesive **Mapeguard WP Adhesive**
7. Rubber tape **Mapeband Easy**
8. Adhesive **Keraflex Maxi S1 Zero**
9. Ceramic tiles
10. Grout **Ultracolor Plus**
11. Sealant **Mapesil AC**

CREATING THE UNBONDED CEMENTITIOUS SCREED

Place compressible polyethylene tape around the perimeter on the surface of the concrete and position a separation layer consisting of polyethylene sheets, for example. Apply a 40 to 80 mm thick layer of **Topcem Pronto** to create a sloping screed.

INSTALLATION OF PROFILES FOR BALCONIES AND TERRACES

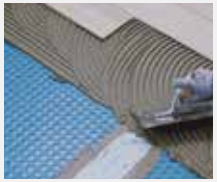
Apply to the balcony frame a **Mapei adhesive** of at least class C2, according to EN 12004, for the application of perimeter profiles for the protection and finishing of external edges of terraces and balconies, such as **Cerfix® Protec** by **Profilpas** (e.g. **Protec CPGV**). Optionally, mechanical fixing is also possible. Leave a gap of approx. 5 mm between profiles - profile and between profiles - external/internal angle 90°. Use the appropriate junction for the joints between the profiles.

APPLYING THE UNCOUPLING ANTI-FRACTURE AND WATERPROOFING MEMBRANE

Apply the **Mapeguard UM 35** isolating, anti-fracture and waterproofing membrane using improved adhesive of minimum class C2 according to EN 12004 and ISO 13007-1 (such as **Keraquick Maxi S1**, **Ultralite S1 Flex Zero**, **Keraflex Maxi S1 Zero** or **Keraflex Easy S1 Zero**). Press the membrane firmly onto the adhesive with a float or **Mapeguard Roller**. Waterproof all the joints between the various sheets of membrane and around the edges and corners between the membrane and perimeter walls by applying **Mapeband Easy** bonded with **Mapeguard WP Adhesive** (applied with a 3 mm notched trowel). Use accessory items from the **Drain** range to waterproof the drains.

INSTALLING CERAMIC TILES

Install the ceramic floor tiles over the **Mapeguard UM 35** membrane using suitable **Mapei** adhesive of minimum class C2 according to EN 12004 and according to the type and format of the tiles, such as **Keraflex Maxi S1 Zero**. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.



GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with a cementitious product such as **Ultracolor Plus** or, as an alternative, **Keracolor GG** or **Keracolor FF** mixed with **Fugolastic** polymer additive.

The joints, corners and edges can then be sealed with a suitable sealant such as **Mapesil AC** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

22 RAPID INSTALLATION OR RENOVATION OF FLOORS IN COMMERCIAL ENVIRONMENTS

1. Old damaged flooring to be removed
2. Concrete
3. Vapour barrier
4. Screed + compressible strip around perimeter **Topcem Pronto**
5. Adhesive **Keraquick Maxi S1**
6. Ceramic tiles
7. Grout **Ultracolor Plus**
8. Sealant **Mapeflex PU 45 FT**

UNBONDED SCREED MADE FROM RAPID-SETTING AND HARDENING MORTAR

In commercial environments where the existing floor is badly deteriorated, it may be necessary to completely demolish the floor and repair the screed. Position compressible polyurethane strip around the perimeter and a suitable separation layer, such as sheets of polyethylene, all over the surface.

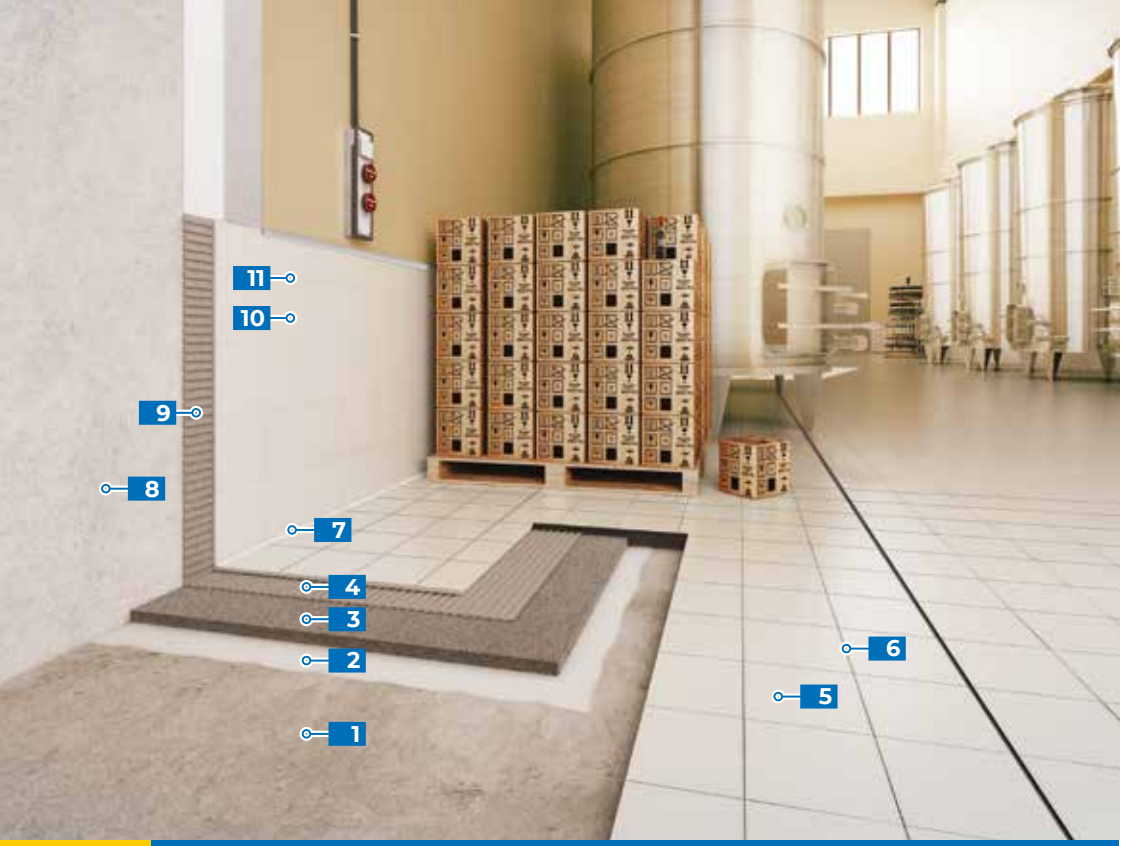
Make the screed from **Topcem Pronto**, which allows ceramic to be installed after 3-4 hours and reaches high mechanical properties very quickly. If necessary, reinforce the screed with metal mesh or add structural fibres, such as **Mapefibre ST30**.

INSTALLING CERAMIC TILES

Once the screed has dried and cured according to specification and the joints in the screed have been created, bond the tiles with **Adesilex P9 Express** or **Keraquick Maxi S1** high-strength, rapid-setting adhesives, which set to foot traffic in just 3 hours and may be put into service after just 24 hours. To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

When the adhesive has set, fill the grout lines (dimensioned according to specification) with **Ultracolor Plus** high-strength, rapid-setting and hardening cementitious mortar with high resistance to abrasion. The floor may be opened to light traffic after around 3 hours. Seal the joints with rapid-setting, high modulus polyurethane sealant such as **Mapeflex PU 45 FT** after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.



23 INSTALLATION OF CERAMIC TILES IN INDUSTRIAL ENVIRONMENTS EXPOSED TO AGGRESSIVE CHEMICALS

1. Reinforced concrete floor slab
2. Adhesion promoter **Eporip**
3. Screed **Topcem Pronto**
4. Adhesive **Elastorapid**
5. Ceramic tiles
6. Grout **Kerapoxy IEG**
7. Sealant **Mapeflex PU 35 CR**
8. Render **Planitop Fast 330**
9. Adhesive **Elastorapid**
10. Ceramic tiles
11. Grout **Kerapoxy IEG**

CREATING THE CEMENTITIOUS SCREED

Install an unbonded screed made from **Topcem Pronto** over a suitable vapour barrier. Embed electro-welded mesh at the mid-point of the screed to distribute loads and stresses acting on the floor more evenly; the screed must be at least 4 cm thick. To level off or repair vertical rendered surfaces use **Planitop Fast 330**. If a screed less than 4 cm thick needs to be created, apply **Topcem Pronto** bonded to the substrate over a layer of fresh epoxy resin such as **Eporip** or cementitious bonding slurry made from **Planicrete**, water and cement at a ratio of 1:1:3.

INSTALLING CERAMIC FLOOR AND WALL TILES

Once the screed is well cured install the tiles with cementitious adhesive with high compressive strength such as **Elastorapid** or **Granirapid** using the double-buttering technique.

Use epoxy adhesives such as **Kerapoxy** or **Kerapoxy Adhesive** if high resistance to chemicals is required as well as high compressive strength. The use of reactive adhesive to bond the tiles increases the chemical resistance of the flooring, which in this case is guaranteed by both the grouted tiles and the installation surface.

To maintain the correct width of grout lines and prevent lippage between adjacent tiles, use the **MapeLevel** range levelling systems.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the appropriately dimensioned grout lines with **Kerapoxy CQ** or **Kerapoxy IEG** epoxy grout with very high resistance to chemicals (according to the level of resistance required), and to oleic acid aromatic hydrocarbons in particular.

Because of the sheer size of this type of environment, it is important that the joints are dimensioned correctly and sealed with products with appropriate mechanical and chemical characteristics such as **Mapeflex PU35 CR** after applying **Mapefoam** to set the depth of the sealant and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

24 WATERPROOFING AND INSTALLING GLASS MOSAICS IN SWIMMING POOLS

1. Reinforced concrete structure
2. Bonding slurry **Planicrete**
3. Floor sublayer Bonded **Planitop Fast 330** or **Topcem Pronto**
4. Skim-coat **Planitop Fast 330**
5. Coving bonded monolithically to the substrate **Eporip** + **Mapegrout 430**
6. Cementitious waterproofing product **Mapelastic Smart**
7. Polypropylene non-woven fabric **Mapetex Sel N**
8. Adhesive **Ultralite S1 Flex Zero**
9. Glass mosaic
10. Grout **Kerapoxy Easy Design**
11. Sealant **Mapesil AC**

SUBSTRATE PREPARATION

The surface of the reinforced concrete floor and wall substrates (well cured and mechanically strong with no traces of form-release compound) may be levelled off with **Planitop Fast 330**. Alternatively, level off the surface of floors with **Topcem Pronto** bonded to the substrate with **Eporip**. Form coving around the perimeter made from **Mapegrout 430** bonded to the substrate with **Eporip**.

WATERPROOFING

After levelling off the vertical and horizontal surfaces, waterproof the surfaces prepared as specified with two coats of **Mapelastic Smart** reinforced with **Mapetex Sel N** non-woven fabric. The total thickness of the waterproofing layer must be at least 2 mm.

INSTALLING GLASS MOSAIC

Install glass mosaics in swimming pools with **Ultralite S1 Flex Zero** lightweight cementitious adhesive, which stands out in particular for its high white balance and makes it particularly suitable for installing glass mosaics.

GROUTING AND SEALING JOINTS

Once the adhesive has set, fill the grout lines with **Kerapoxy Easy Design** anti-acid, decorative, easy to apply and clean, bacteriostatic epoxy grout; add **MapeGlitter** or **Mapecolor Metallic** if required to the grout.

In correspondence with edges, corners, joints and changes in slope apply **Mapesil AC** elastic sealant after setting the depth of the sealant with **Mapefoam** and finish off the surface of the sealant with **UltraCare Smooth Silicone**.

Mapei
Technical Services

Mapei's highly-qualified **Technical Services Division** is always available for our clients to guarantee the most appropriate level of support, from the design phase right up to actual site activities.
Assistance and support for our clients is guaranteed in every corner of the world: **Mapei** clients can count on highly specialised engineers and qualified personnel as part of a network spread throughout the entire territory with in-depth knowledge and expertise in every sector. Our professionals and engineers are able to provide a comprehensive consultancy service on our products and support to help overcome every type of problem.

Mapei Technical and Commercial Support

The figures in the table are for indication purposes only; always refer to the Technical Data Sheet for each product which are available on our website **www.mapei.com**

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