THINNER

SLIM · LIGHTWEIGHT · PORCELAIN

Technical Manual

floridatile

THE NEW SURFACE FOR ARCHITECTURE

THINNER is the laminated porcelain stoneware product by Florida Tile that is reinforced with fiberglass and whose strengths are its resistance, versatility, and ease of use. Light weight, flat, flexible, easy to cut, drill and lay, and easy to clean. The result of research focused on beauty and technical excellence, cardinal elements of modern architecture, THINNER is a truly universal surface, ideal for various uses and applications: not just floor and wall covering, but also furniture, accessories, ventilated walls, and cladding of tunnels and major structures.

THINNER

SLIM · LIGHTWEIGHT · PORCELAIN

THE ADVANTAGES OF BEING UNIQUE

THIN AND LIGHT

Gauged porcelain tile of THINNER are particularly thin and have a weight of only 7,8 kg/m^2 for THINNER 3plus (3,5 mm thick).

LARGE

A range of gauged porcelain tile with sizes up to 3 x 1 metres. The perfection of the gauged porcelain tile allows for installation with extremely narrow joints.

FLAT

The innovative production process of THINNER®, which is pressed on a containuous belt, allows us to produce perfectly flat gauged porcelain tile.

EASY TO CLEAN

THINNER is non-absorbent, easy to clean and resists acid, stains and pollution.

EASY TO INSTALL

Thin and light, easy to cut and drill, install time is reduced by 40% with respect to traditional tiles.

RESISTANT

Laminated porcelain stoneware reinforced with fiberglass, perfectly compact and pressed with a force of 15,000 tons.

ECOFRIENDLY

An environmentally friendly manufacturing process: 65% less consumption of raw materials, 80% less water required, 30% less energy required, 30% less CO_2 emissions.

ANTIMICROBIAL

The Microban antimicrobial is active 24/7, inhibiting microbial reproduction throughout the entire life of the tile.

GUARANTEED

The beauty and extraordinary quality of our floors are values that resist time: resistance of surfaces to wear and frost is guaranteed for 20 years.

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The information and directions provided in this manual are to be considered valid until an update is published. The updated document replaces all previous publications. You can check for updates on the company website at floridatile.com/THINNER or contact the company's technical support office. The company reserves the right to modify the contents and appearance of this manual, should this be deemed necessary. As far as ancillary materials (adhesives, mats, etc.) are concerned, the indications provided are those of the relative manufacturers that guarantee the technical characteristics of their products on the market.

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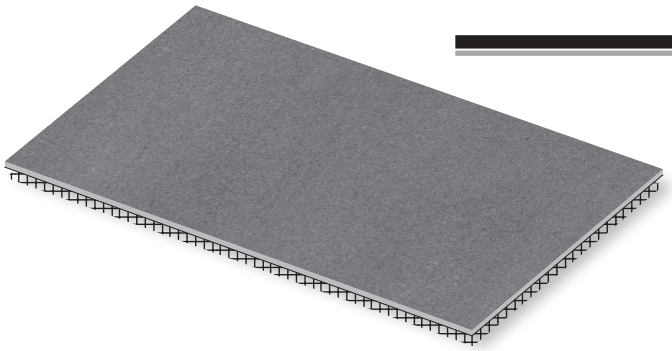
THINNER

1.1 - What is THINNER?

Produced by means of extremely innovative technology, THINNER is manufactured in 300x100 cm gauged porcelain tile, using a porcelain stoneware body made of top quality raw materials. It is pressed at a force of 15,000 tons. Firing takes place in innovative and eco-friendly kilns that are the result of the research and know-how of Panariagroup. The THINNER gauged porcelain tile are only 3 mm or 5 mm thick, which makes them flexible, light and extremely easy to handle. The minimal thickness is **the striking feature**, which makes the product suitable for a variety of different applications.

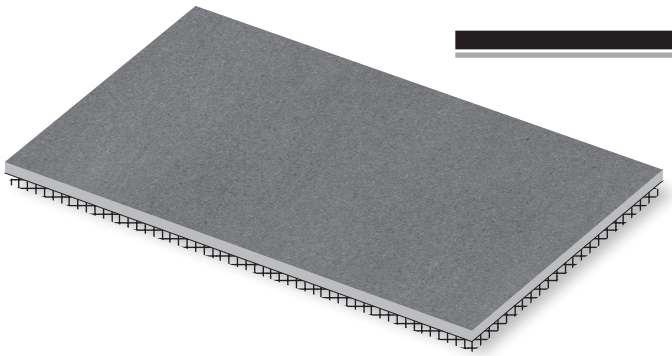
1.2 - Available types: THINNER 3plus and THINNER 5plus



THINNER 3plus

3.5 mm
thickness

With fiberglass mesh reinforcement
Porcelain stoneware gauged porcelain tile with a thickness of 3.5 mm, with fiberglass mesh on the rear side, in sizes up to 300x100 cm.



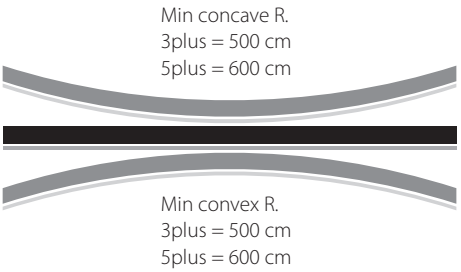
THINNER 5plus

5.5 mm
thickness

With fiberglass mesh reinforcement
Porcelain stoneware gauged porcelain tile with a thickness of 5.5 mm, with fiberglass mesh on the rear side, in sizes up to 300x100 cm.

1.3 - THINNER 3plus and THINNER 5plus: flexibility

THINNER 3plus and THINNER 5plus feature high levels of flexibility.
Thanks to the quality of the raw materials, innovative production process, and the use of reinforced fiberglass, these products are able to adapt to curved, concave and convex surfaces.
The minimum radius of curvature is approximately 500 cm for THINNER 3plus and 600 cm for THINNER 5plus, in all the available formats.
Products with particular finishes can have certain limitations, so please contact the Panariagroup Research Center before proceeding with the installation.



THINNER 3plus and THINNER 5plus: Which and Why?(*)

	**WALL INSTALLATION** For NEW BUILDINGS and RENOVATION projects that require installation on pre-existing wall cladding	THINNER 3plus	THINNER 5plus
 **Interiors**	Any residential and commercial environment, in situations where holes and/or cuts are **not** necessary.	●	●
	Any residential and commercial environment, in situations where holes and/or cuts are necessary.	●	●
 **Exteriors**	In situations where holes and/or cuts are **not** necessary and with sizes up to 100x100 cm.	●	●
	In situations where holes and/or cuts are necessary and/or for large sizes.	●	●
	**FLOOR INSTALLATION** For NEW BUILDINGS and RENOVATION projects that require installation on pre-existing floor coverings	THINNER 3plus	THINNER 5plus
 **Interiors**	**Residential** (kitchens, bathrooms, living rooms, common apartment block areas and any other residential environment).	●	●
	Light commercial (offices, offices open to the general public, waiting rooms, shops, bathrooms, restaurant dining rooms, car showrooms, bars, cinemas, hospitals/clinics).	●	●
	Intensive commercial (common areas of shopping centers, hotel foyers, cafeterias, fast food restaurants, dance clubs, hospitals) with the exception of areas subject to heavy concentrated loads (e.g. carts with hard wheels).	-	●
 **Exteriors**	Conditions where surfaces are sheltered (e.g. loggias, covered balconies, etc.) and made totally impervious, we recommend the use of sizes that have sides not exceeding 100 cm.	●	●
SPECIAL USES		THINNER 3plus	THINNER 5plus
 **Ventilated facades**	Depending on project specifications and in combination with the construction systems recommended by Panariagroup and approved by the Project Supervisor.	●	●
 **External wall thermal insulation system**		●	●
 **Bathtubs and swimming pool cladding**		●	●
 **For furniture surfaces**		●	●

(*) Products with special finishes can have limitations depending on their area of application. Refer to specific collection catalogs

03

Working with THINNER 3plus and THINNER 5plus

3.1 - Handling

Due to their lightness, all types of THINNER gauged porcelain tile are much easier to handle and transport than marble, granite and natural stone slabs, which are much thicker and therefore much heavier. With an identical weight, the number of square meters transported is four times greater. The weight of a 100x100 cm gauged porcelain tile is approximately 7.8 kg for THINNER 3plus and 11.5 kg for THINNER 5plus. When handling, the use of gloves is recommended.

HANDLING WHOLE GAUGED PORCELAIN TILE (300x100 cm) THINNER 3plus AND THINNER 5plus

Fig.1 - All types of 300x100 cm THINNER gauged porcelain tile can be lifted by one person. Lift the gauged porcelain tile with open hands. Slowly raise the longer side so as to eliminate the suction effect, due to contact with the underlying gauged porcelain tile, and ensure a good grip.

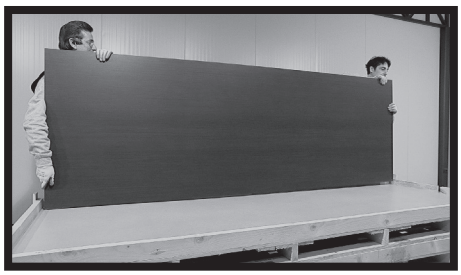
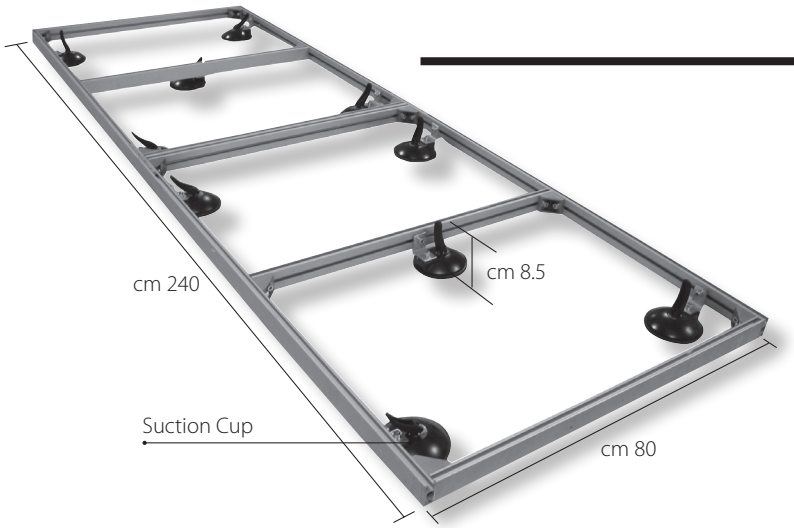


Fig.2 - Guide the gauged porcelain tile to its upright position, keeping it as straight as possible.

Fig.3 - When the slab is upright, hold it from its top edge and shift it keeping it straight and upright. This operation should be performed with the aid of a second person.

Fig.4/5 - All versions of THINNER gauged porcelain tile, of size 300x100 cm, can be handled by two people, using a special frame. Fix the frame to the gauged porcelain tile when it is still on the pallet using the suction cups. Raise the frame and gauged porcelain tile to eliminate the suction effect.

Owing to their lightness, all types of THINNER are much easier to handle and transport than marble, granite and natural stone slabs, which are much thicker and therefore much heavier.



The Frame

To safely handle and install THINNER gauged porcelain tile, of various types in the 300x100 cm size, a special frame is available upon request. It is made of aluminium and features suction cups. It is ideal for installing on scaffolding at a height of over two meters.

STORAGE OF WHOLE GAUGED PORCELAIN TILE (300x100 cm)

All versions of THINNER gauged porcelain tile (300x100 cm) can be stored either in vertical or horizontal position. If placing one gauged porcelain tile on top of the other, make sure that each gauged porcelain tile is clean and that the surface the gauged porcelain tile are resting on is flat.

Fig.6 - For upright storage, place the long side of the gauged porcelain tile on wooden planks.

HANDLING OF PACKAGES CONTAINING 300x100 cm GAUGED PORCELAIN TILE

Lifting and handling palletized packages with forklift trucks:

LONG SIDE HANDLING

Fig.7 - To take on pallets from their long side, position the forks at a distance of at least one meter apart, perpendicular to the long side of the pallet and at the center of the latter. Forks must be supporting the entire depth of the pallet.

SHORT SIDE HANDLING

Fig.8 - We recommend using forks at least 84" long for maximum protection when handling from the short side. This will be necessary, since most US trucks do not allow for unloading and loading from the sides. 300 x 100 cm Florida Tile pallets are reinforced to allow maximum protection when being lifted from the short side and during handling by transporters.

Fig.9 - Handling from long side with short forks is acceptable for short distances, but not ideal. We suggest this only for movement around warehouses or jobsites with minimal use. To move on pallets from their short side (i.e. when unloading trucks), you must use forks with a length of at least 84" to guarantee a sufficiently long supporting surface and to protect the pallet and its contents.

3.2 - Cutting, drilling and edge finishing

A striking feature of THINNER is its extreme ease-of-installation: this material can be easily cut, shaped and drilled both by tile layers and artisans (stone cutters, glass-workers, etc.) using automatic machines and tools for porcelain stoneware, glass and marble. For manual operations and when using mechanical tools (such as angle grinders, drills, cutters and electric screwdrivers drills), it is recommended to wear gloves, dust masks and protective eyewear. Follow the requirements regarding the personal protective equipment that should be used provided by the tool manufacturers.

A striking feature of THINNER is its extreme ease-of-installation.

3.2.1 - Manual processing

PREPARATION

It is essential to work on a flat and clean surface; it is possible to use the cover of the pallet of the 300x100 cm gauged porcelain tile.

CUTTING WITH A GLASS CUTTER OR MANUAL TILE CUTTER

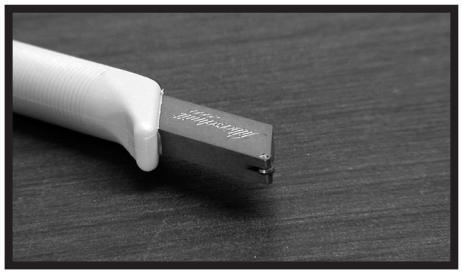


Fig.10 - You can obtain excellent results in terms of shape and clear cuts by scoring all versions of THINNER (with Silberschnitt 2000 special glass cutters manufactured by **Bohle America**) to achieve quality cuts, do not pick the glass cutter up from the gauged porcelain tile throughout the entire cutting operation. To cut polished surfaces use a tile cutter ruler (for instance Keracut by **Sigma** or Free-cut by **Raimondi**), exerting a strong pressure on the carriage mounted on the ruler (see **Fig.14**), or a diamond disc for porcelain stoneware (see **Fig.16**). To cut structured surfaces it is necessary to use a diamond disc for porcelain stoneware (see **Fig.16**).

Fig.11 - To score the tile in a straight line, one can use aluminium straight edges normally used by builders.

Fig.12 - After scoring, it is sufficient to bend the gauged porcelain tile to split the two pieces.

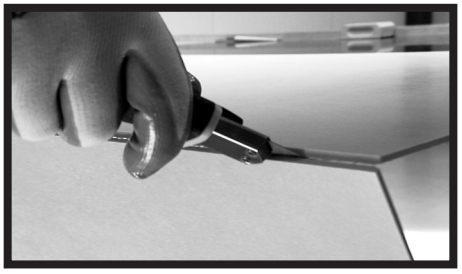


Fig.13 - For THINNER 3plus and THINNER 5plus, after scoring the ceramic part and splitting the gauged porcelain tile, complete the operation by cutting the fiberglass mesh with a standard cutter.

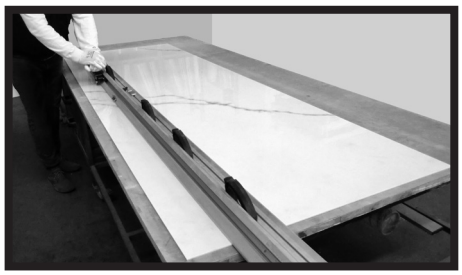


Fig.14 - A practical tool for cutting is the tile cutter ruler (for instance Keracut by **Sigma** or Free-cut by **Raimondi**). For THINNER 3plus and THINNER 5plus, after scoring the ceramic part and splitting the gauged porcelain tile, complete the operation by cutting the fiberglass mesh with a standard cutter (see **Fig.13**). It is advisable to use this tool to cut polished surfaces, exerting a strong pressure on the carriage mounted on the ruler. To cut structured surfaces it is necessary to use a diamond disc for porcelain stoneware (see **Fig.16**).

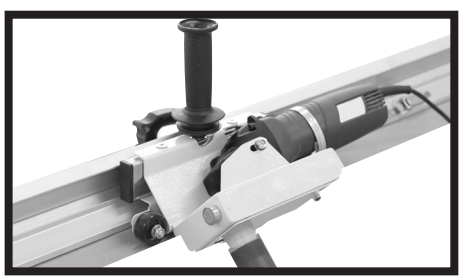


Fig.15 - With tile cutter rulers, one can use hand-held angle grinders, fitted into special frames that can be "fit onto" the cutting guide (such as Free-flex 35°/55° by **Raimondi**). In this way it is possible to produce 90° cuts and 45° cuts for bevels and jolly pieces.

CUTTING WITH DIAMOND DISCS

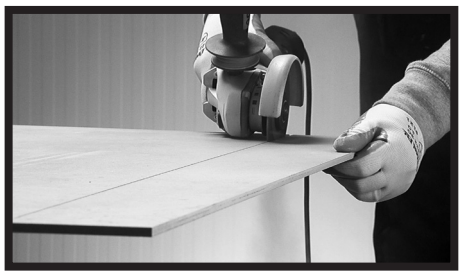


fig.16 - All THINNER versions can be cut using diamond discs fitted onto hand-held electrical grinding machines. Disc rotation speed must be high (> 10000 RPM) and feed rate low (< 3 feet/min). Depending on the type of disc and the length of the cut, it may be necessary to cool the disc with water. Recommended discs are the thin types generally used for cutting porcelain stoneware. The advantages of this type of cut include ease-of-execution and the possibility to cut during installation.

DRILLING

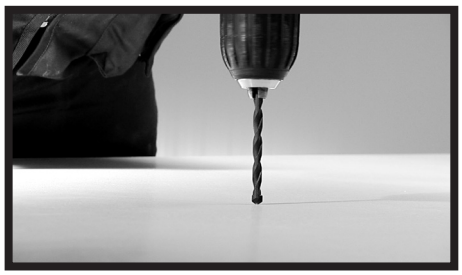


Fig.17 - As far as drilling is concerned, use tungsten bits with a diameter up to 3/8", fitted to electric or battery-operated drills.

Fig.18/19 - As an alternative, one can use holesaws fitted to angle grinders, electrical drills or battery-operated screwdrivers.

INTERNAL CUT / L-SHAPED CUT

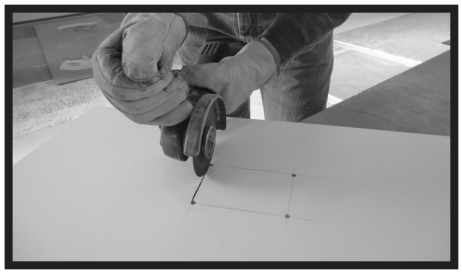


Fig.20 - To obtain internal and L-shaped corners, round off the vertices of the internal corner using drill bits with a radius of at least 3/16" to reduce the risk of breakage. Then cut with diamond discs, taking care to stop moving the cutting tool forward when the previously drilled hole is reached.
To drill and cut using diamond discs, follow the instructions provided above.

When using these tools:
- cool the point being drilled with water;
- do not exert too much pressure and bear in mind the resistance of the type of laminated porcelain stoneware being worked on;
- when using tungsten drill bits, start drilling at a low speed;
- when using drills or screwdrivers, do not select hammer mode.

EDGE FINISHING

Fig.21 - Edges can be finished by hand using abrasive diamond sponges or emery paper. By slightly sanding the side of the gauged porcelain tile, one can obtain a slightly rounded-off edge and with repeated sanding one can obtain bevelled effect.

Fig.22 - The same results can be obtained with sanding discs fitted onto hand-held angle grinders.

Fig.23 - The use of the grinder together with particular trolleys allows the execution of flat chamfers with angles between 35° and 55° (with Jolly-angle type trolleys produced by **Sigma**) or round chamfers (with a Bull type trolley produced by **Raimondi**).

3.2.2 - Machine processing

Irrespective of the processing method adopted, the underlying surface must be perfectly flat to prevent vibration and movements of the gauged porcelain tile that could lead to breakage or damage to the finish. It is recommended to use diamond tools for porcelain stoneware, in good working order.
To obtain internal corners and L-shaped cuts, round off the edge of the corner using bits with a radius of at least 5 mm that reduce the risk of breakage. It is recommended to perform a few tests before cutting so as to set up the machine in the best manner possible. Operating parameters provided in this guide are to be considered as **indicative** and must be tested and checked by the user depending on the material used and the operations to perform.

SCORING

Fig.24 - All types of THINNER can be cut by scoring. This operation must be performed on a cutting bench and on the front face of the gauged porcelain tile. As far as THINNER 3plus and THINNER 5plus are concerned, if this operation cannot be performed automatically on a cutting bench, the fiberglass mesh must be cut by hand with a cutter. Move the cutting tool forward at a speed of 30 ft. (10M)/min. and in any case at a speed suitable for the finish and color of the gauged porcelain tile with an average pressure of around 18 psi. For gauged porcelain tile with light colours, exert a pressure of about 22 psi.

CUTTING WITH A DISC

Fig.25 - All versions of THINNER can be cut with diamond discs. Use discs made especially for porcelain stoneware and in good working condition.
Disc rotation speed must be high (> 2000 RPM) and feed rate low from 1.5 to 3ft (0.5 to1m) /min.). Depending on the type of disc and the length of the cut, it may be necessary to cool the disc with water.
Reduce disc rotation speed at the start and and the end of the cut.

CUTTING WITH CNC MACHINES

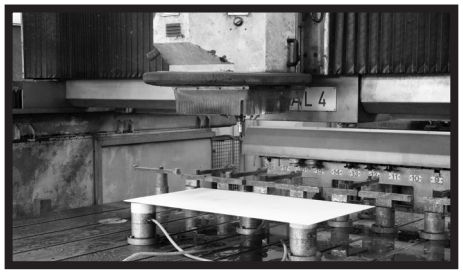


Fig.26 - All versions of THINNER can be cut with CNC machines.
Cutter rotation speed ranging between 12000 and 18000 RPM. The cutter must be pushed forward at a speed ranging from 1.5 to 3ft (0.5 to1m)/min.

CUTTING WITH WATERJET MACHINES

Fig.27 - All versions of THINNER can be cut with waterjet cutting machines.
Adopt a speed ranging from 6 to 9ft (2 to 3m)/min.

DRILLING WITH A CNC MACHINE

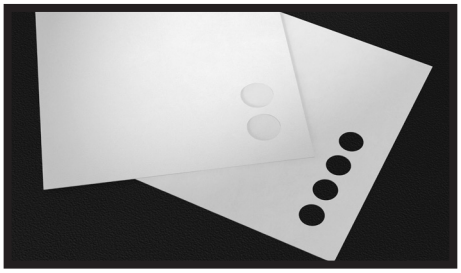


Fig.28 - THINNER, in all of its versions, can also be drilled using CNC machines. Drill a preliminary hole using a diamond drill bit and if necessary use a hole saw to enlarge the hole to the required dimensions. Use a bit with a diameter ranging from 1/8" to 5/16" (4 to 8 mm). Operating speed is 1.5" (40 mm)/min. with spindle rotation of 900 RPM. When using these tools: cool the point drilled with water; start drilling at a low speed; never exert too much pressure and bear in mind the resistance of the type of THINNER you are working on.

DRILLING WITH A WATERJET MACHINE

Fig.29 - All versions of THINNER can be drilled with waterjet cutting machines.
With waterjet machines, one can obtain holes with a smaller diameter compared to those possible with CNC machines. Operating speed must range from 1/16" to 1/8" (2 to 3 m)/min.

EDGE POLISHING

Fig.30 - To shape and polish the edge of the gauged porcelain tile, use diamond/abrasive discs, which are suitable for obtaining an edge of the shape and size requested.
Finish the edge with a polishing disc. Different discs are available for obtaining different edge finishes. Operating speed must be tested beforehand.

45° CUT

Fig.31 - To obtain 45° cuts, use 45° diamond discs. In this way, it is possible to join two gauged porcelain tile of THINNER to create a corner. The corner must then be bevelled.
Different discs are available for obtaining a variety of edge finishes. Operating speed must be tested beforehand.

BEVELLING

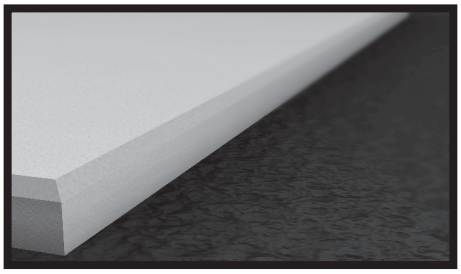


Fig.32 - All versions of THINNER can be bevelled.
To smooth curved edges use a CNC machine with a 5 axis grinding wheel. Different discs are available for obtaining a variety of edge finishes. Operating speed must be tested beforehand.

04

Installing THINNER 3plus and THINNER 5plus

As for all building materials, THINNER works in combination with other materials. **For this reason, it is essential to:**
- define the characteristics of the substrate on which gauged porcelain tile will be installed (see "4.1 **- The Substrate**");
- choose an adhesive that is suitable for the substrate and intended use (see "4.2 - **Recommended adhesives**");
- lay THINNER on the substrate in the correct manner (see "4.3 - **Instructions for installation**").

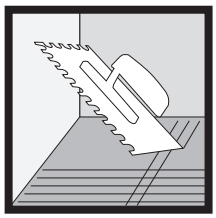
If the requirements of these three points are fulfilled, THINNER will offer all the best of its unique characteristics.

4.1 - The Substrate

4.1.1 - Substrate: technical requirements

Irrespective of whether one is installing on walls or on floors, the substrate **must** be between 40°F (4°C) to 95°F (35°C) and structurally sound (deflection not to exceed 1/360 of the span) and **must** have the characteristics described in detail below. Testing and checking these conditions is the responsibility of the project designer and of the persons performing installation work.
It is essential that substrate preparation should be completed following ANSI A108 AN-2 "General Requirements for Subsurfaces".
All substrates should be plumb and true, surface deviation should not exceed 1/8" in 10'.

■ COMPACT



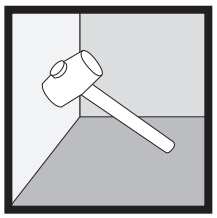


Fig.33/34 - Make sure that the substrate is compact both in terms of surface and structure. Check compactness of surface by tracing (engraving) a grid on the substrate with the edge of a trowel or with a steel nail. A substrate can be considered as compact if it does **not** crumble or pulverise in the point where the lines of the grid intersect. Check compactness of the structure by tapping on the surface with a 750 g mallet: **no** marks should form and the sound heard when tapping must not be hollow. The presence of layers or areas with a more brittle consistence means that mechanical characteristics are poor and may cause breakage or dislodging of gauged porcelain tile.

■ DRY

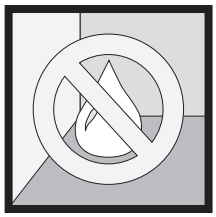


Fig.35 - It is critical to the success of the installation that the substrate be dry and ready for accepting finishes. This test can be performed using a hygrometer for building materials. Follow the material and the industry installation standards, TCNA (Tile Council of North America) and ANSI (American National Standards Institute, Inc.) Handbooks.

■ FLAT

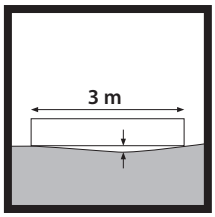


Fig.36 - Flatness checking is performed using a levelling rod with a length of at least 10 ft. Place the rod on the gauged porcelain tile in all directions. The permissible tolerance is 1/8".

■ STABLE OVER TIME

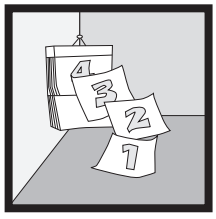


Fig.37 - The substrate must have suitable features for the intended use and must remain stable over time.

■ CLEAN

Fig.38 - The support must be clean. Dust, oil, grease, dirt and debris must be removed as they may compromise adhesion of the adhesive.

■ CRACK-FREE

Fig.39 - In cement-based screeds, the presence of cracks due to hygrometric shrinkage is caused by one or more of the following factors: too much water in the mixture, too fine a grain size of the aggregates, too much cement. Before installation, fill any cracks and holes.

When installing on cement-based floors, consider the use of self-leveling products manufactured by **"TEC, LATICRETE and MAPEI"** guarantees all conditions described above. Use the product in accordance to the manufacturer's instructions.

4.1.2 - Substrate: special instructions for installation on pre-existing walls/floors

For installation on pre-existing walls/floors, apart from the features described in paragraph "4.1.1 - **Substrate: technical requirements**", also take into account the following indications:

INSTALLATION ON HARDWOORD

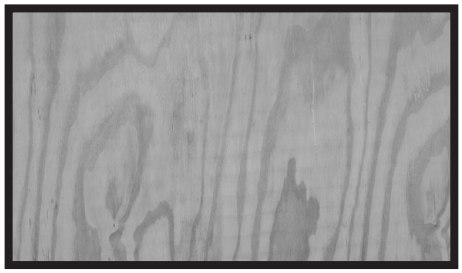
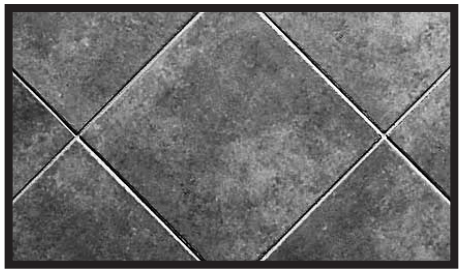


Fig.40 - When tiling over wood substrates, a layer of TCNA approved backer board underlayment is required. Install the backer board in accord with the manufacturer's installation instructions (see. **Fig. 55**).

INSTALLATION ON OLD CERAMIC TILES, COTTO, STONE, MARBLE, PVC



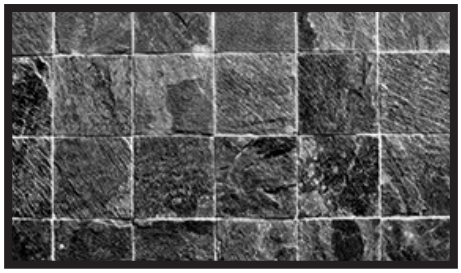


Fig.41/42 - Make sure that the substrate is sound and firmly fixed. Eliminate any residues of oil, grease or wax by washing with a solution of water and caustic soda followed by thorough rinsing. If chemical cleaning is not possible, adopt mechanical abrasion techniques.

INSTALLATION ON METAL

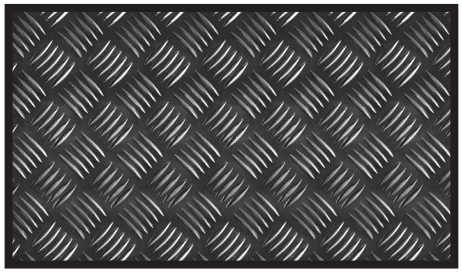


Fig.43 - Make sure that the substrate material is sound and firmly fixed. All residues of oil, grease, wax and paint must be removed by means of mechanical abrasion systems. After cleaning, remove all residues with particular care.

4.1.3 - Substrate: special instructions for installation on exterior plaster walls

For installation on exterior plaster, apart from the features described in paragraph "4.1.1 - **Substrate: technical requirements**", also take into account the following indications:

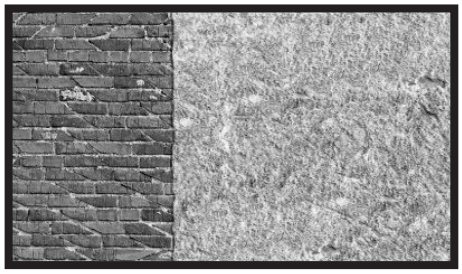
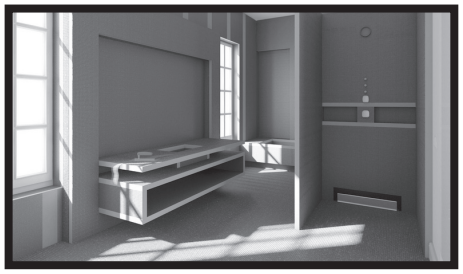


Fig.44 - For wall installation on exterior plaster, THINNER 3plus and 5plus must be adhered onto the properly prepared, well cured plaster with a high performance adhesive, which resists mechanical stress, such as structural movement, the weight of the tile, any thermal expansion and weather. It is recommended to use secondary reinforcement of fiberglass mesh intended for this purpose by the plaster manufacturer (such as **Dryvit, Parex USA, LATICRETE and STO**), this is critical around openings. During installation, pay attention to stringcourses, control and expansion joints.

4.1.4 - Substrate: instructions for self-supporting panels

Direct installation on the following products has been tested for the conditions described below. For each of the following systems, follow the manufacturer's instructions and perform work in accordance to "best practice". After installing the system, make sure that the substrate on which the gauged porcelain tile will be laid has the features described in paragraph "4.1.1 - **Substrate: technical requirements**".



These self-supporting panels (such as for instance **Fig.45** WEDI building panels by WEDI, Schluter - KERDI BOARD by Schluter-Systems and HYDRO BAN Board by LATICRETE®) can be used:
- as supporting material for ceramic tiles;
- as substrate for installation of ceramic tiles;
- for protection against humidity;
- as effective heat insulating material;
- for design purposes.

The panels can be used in interior environments at normal temperatures.
For information about special uses (e.g. swimming pools, refrigerated rooms, exteriors, etc.), contact the manufacturer of the panel.

4.1.5 - Substrate: instructions for installation on mats used for uncoupling, soundproofing, etc.

Direct installation on the following products has been tested for the conditions described below. For each of the following systems, follow the manufacturer's instructions and perform work in accordance to "best practice". After installing the system, make sure that the support on which the gauged porcelain tile will be laid has the features described in paragraph "4.1.1 - **Substrate: technical requirements**".

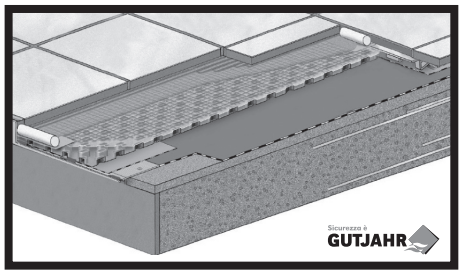


Fig.46 - Watec® Drain Kp by Gutjahr®
This is an uncoupling and draining cushioning material.
It is used:
- as drainage system for loggias, balconies and bathrooms;
- as uncoupling element in closed environments, such as: critical substrates (existing floors, different materials, etc.); screeds with a high content of calcium sulphate; heated floors; wooden substrates and dry screeds.

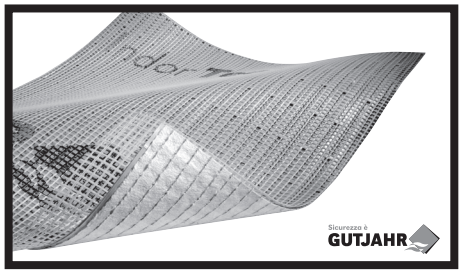


Fig.47 - IndorTec® 2E-PZ by Gutjahr®
This is a highly resistant uncoupling system with a reinforced mesh. This product must be adhered to the substrate. After it is possible to proceed with the tile installation. It is to be used in closed environments:
- critical substrates (existing floors, different materials, etc.);
- fresh, still damp cement screeds;
- heated floors;
- wooden substrates and dry screeds.

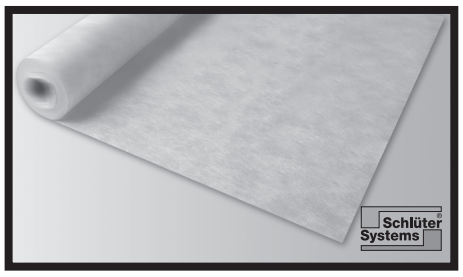


Fig.48 - SCHLUTER® - KERDI by Schluter-Systems
This material is a 0.2 mm thick polyethylene membrane, which is elastic and waterproofing. It is to be installed with adhesive under ceramic wall and floor tiles in bathrooms, showers, etc. The 0.5 mm version also acts as vapour barrier.

Fig.49 - HYDRO BAN Sheet Membrane by LATICRETE®
This is a 0.5-0.7 mm thick waterproof sheet membrane that is installed using a substrate appropriate LATICRETE® thin-set. Due to its polymeric construction, HYDRO BAN Sheet Membrane can also be used as a vapor barrier/waterproofing membrane for steam room and steam shower applications. Available in rolls, tapes, corners and collars, HYDRO BAN Sheet Membrane allows for a quick, easy waterproofing installation, which will retain its integrity for the life of the installation.

ONLY FOR THINNER 5plus

Thanks to its physical and mechanical characteristics, THINNER 5plus can also be used with different types of mats. Please note - 3plus is **not** suitable over any Dirta Mat. Direct installation on the following products has been tested for the conditions described below. For each of the following systems, follow the manufacturer's instructions and perform work in accordance to "best practice". After installing the system, make sure that the support on which the gauged porcelain tile will be laid has the features described in paragraph "4.1.1 - Substrate: technical requirements".

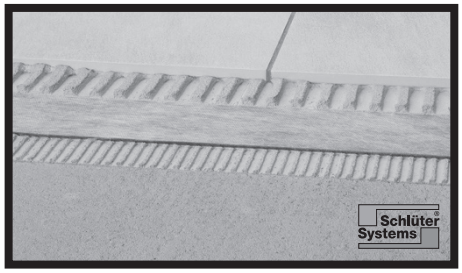


Fig.50 - SCHLUTER® - DITRA-SOUND by Schluter-Systems
This is an impact sound insulating mat, made of high density polyethylene, which is suitable for installation with adhesive under ceramic coverings. It has an anchoring fleece laminated on both sides to effectively bond with the tile adhesive.

Fig.51 - SCHLUTER® - DITRA 25 by Schluter-Systems
This is a polyethylene membrane for uncoupling, waterproofing and that allows release of pressure caused by vapour. Main applications:
- in interiors, for preventing cracks in floors, even when large gauged porcelain tile are used;
- on heated concrete for even diffusion of heat;
- as waterproofing system for loggias, covered balconies and bathrooms.

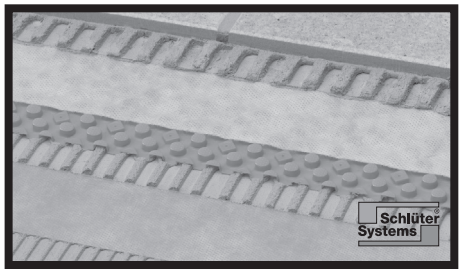


Fig.52 - SCHLUTER® - DITRA DRAIN 4 by Schluter-Systems
This material is a polyethylene membrane consisting of webbing and permeable fabric. It acts as a passive capillary drainage system and uncoupling system between the substrate and the ceramic floor. Main applications:
- in interiors, for preventing cracks in floors, even when large gauged porcelain tile are used;
- on heated concrete for even diffusion of heat;
- as integration for waterproofing system for loggias, balconies and bathrooms.

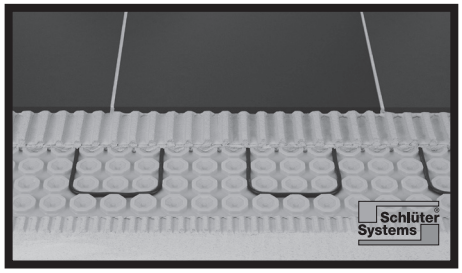


Fig.53 - SCHLUTER® - DITRA HEAT by Schluter-Systems
SCHLUTER®-DITRA-HEAT is an electric heating system for walls and floors with DITRA membrane technology: uncoupling, waterproofing, vapour pressure venting that guarantees intact coating over time.
The DITRA-HEAT-TB version with integrated heat shield can produce noticeable heat in very fast period of times.
- the areas to heat can be selected individually;
- the heating cable is laid in the membrane and embedded directly into the adhesive, so it is immediately below the ceramic surface;
- ideal for renovation projects thanks to its reduced height;
- system without self-leveling concrete;
- easy and quick to install;
- it is used in interior spaces to guarantee crack free surfaces even when using large format tiles;
- certified system components.

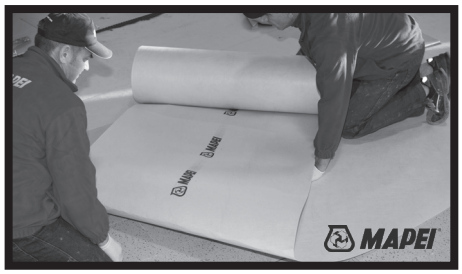


Fig.54 - Mapetex System by Mapei®
This is a removable system, which preserves the integrity of the floor underneath.
The system consists of a special non-woven fabric (Mapetex), which is used in combination with adhesive strips (Mapetex-Strip) to create a support for the installation of floors that can be easily removed.
Mapetex can also be used as an isolating and anti-fracture membrane, limiting the damage that could be caused to the flooring by micro-cracks in the supporting element.

4.1.6 - Substrate: instructions for special construction systems

Installation is also possible on **construction systems** where the most appropriate industry installation standards, TCNA (Tile Council of North America) and ANSI (American National Standards Institute, Inc.) Handbooks are closely followed, and that the support has the characteristics described in paragraph **"4.1.1 - Substrate: Requirements"**:

INSTALLATION ON FIBRE CEMENT PANEL SYSTEMS (BACKER BOARD)

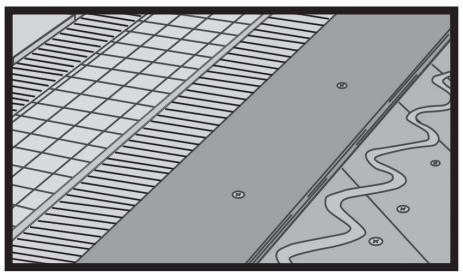


Fig.55 - This system consists of cement-based panels enclosed within two layers of fiberglass mesh, to be installed both on walls and on floors, fixed either mechanically or chemically to the underlying structure. When preparing this support, strictly follow the manufacturer's instructions. Make sure that the points of contact between support and gauged porcelain tile are filled with adhesive and that there is an overlying layer of fiberglass mesh submerged in the adhesive used for installation. This will ensure a support without cracks.
After installing the system, make sure that the support on which the gauged porcelain tile will be laid has the features described in paragraph "4.1.1 - **Substrate: technical requirements**".

INSTALLATION ON SUSPENDED TIMBER FLOORS

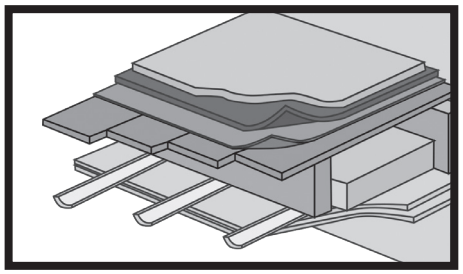


Fig.56 - This construction system consists of a floor made of wooden planks secured by means of nails to a lattice of stringers. Installation of this construction system is similar to **installation on hardwood - Fig.40**: follow the instructions provided.

INSTALLATION ON SUSPENDED SUPPORTS (E.G. GIFAFLOOR FHBPLUS BY KNAUF)

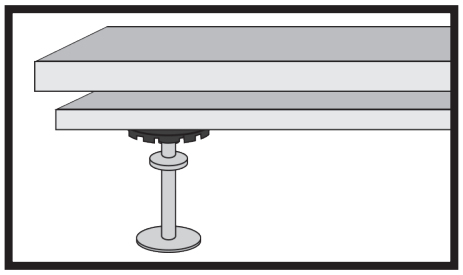


Fig.57 - This system consists of gypsum fiberboard panels laid on steel supports with an adjustable height. When preparing this system, strictly follow the manufacturer's instructions. Make sure that the points of contact between support and gauged porcelain tile are filled with adhesive. This will guarantee a crack-free support. After installing the system, make sure that the support on which the gauged porcelain tile will be laid has the features described in paragraph "4.1.1 - **Substrate: technical requirements**". Application of a primer before the tile adhesive must be decided upon by the manufacturer of the adhesive that will be used.

INSTALLATION ON ELECTRICAL HEATING SYSTEMS

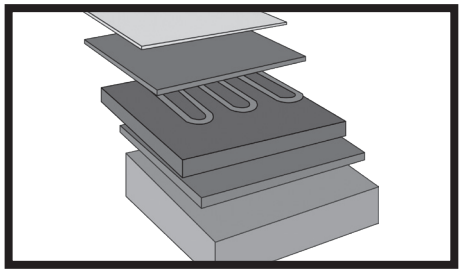


Fig.58 - An evolution of the classical heating system where the radiant element is embedded in the screed. This system consists in installing the radiant element beneath the tiles or rather in the adhesive used for installation of THINNER or under a layer of self-levelling mortar. This type of system can be installed directly on a screed or existing floor. A layer of insulating material may be installed in between. Irrespective of the number and type of layers, after the adhesive or self-levelling mortar has cured, it is important to check that the substrate has the features described in detail in paragraph "4.1.1 - **Substrate: technical requirements**".

WALL INSTALLATION ON UNCOUPLING AND MICROVENTILATED CUSHIONING - SYSTEM CeraVent® BY GUTJAHR®

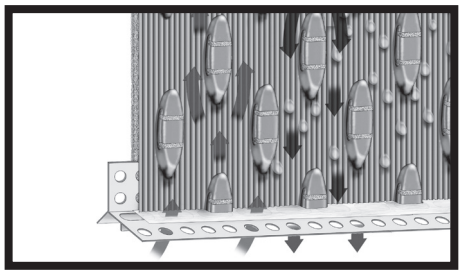


Fig.59 - THINNER 3plus and THINNER 5plus can be installed directly on the **Gutjahr®** system **CeraVent®**. This system allows for wall installation (walls featuring salt and rising damp, damaged facades, mixed supports, prefabricated materials, etc.) and offers microventilation and uncoupling from the substrate.

4.1.7 - Substrate: instructions for installing in accordance to "best practice"

Below we have listed some basic information concerning "best practice" to follow for the most common types of substrates:

CEMENT-BASED SCREEDS

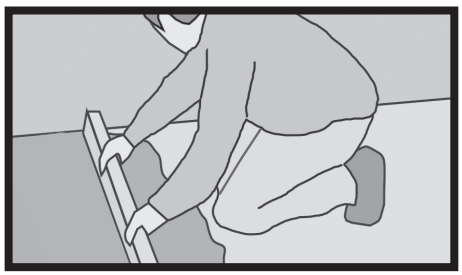


Fig.60 - The curing/seasoning time of cement-based screeds is of essential importance. As far as conventional sand/cement screeds are concerned, this time is about 7-10 days per cm of thickness. If you are using premixed products, follow the instructions of the manufacturer. Follow the material and the industry installation standards, TCNA (Tile Council of North America) and ANSI (American National Standards Institute, Inc.) Handbooks.

GYPSUM

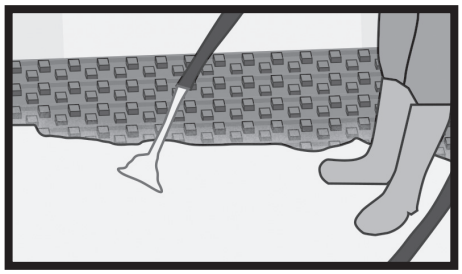


Fig.61 - Follow the mortar manufacturer's recommendations and appropriate TCNA (Tile Council of North America) Handbook method. Before installation, the screed must be sandpapered, dusted and dry.

HEATED SCREEDS

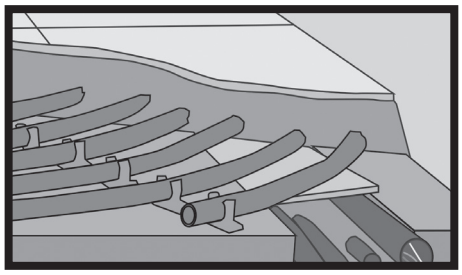


Fig.62 - Before starting the heated floor system, wait at least 14 days after installing the mortar bed. Once the floor has reached ambient temperature, tile installation can begin.

CONCRETE

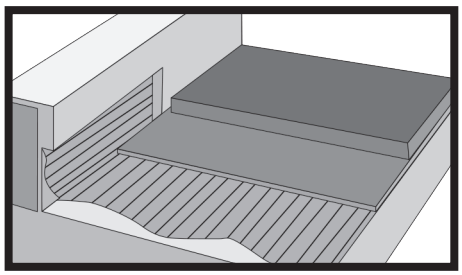


Fig.63 - Concrete must be sufficiently cured (this takes about 6 months or even more, depending on its thickness, composition, thermo-hydrometric requirements, etc.) and must not feature surface treatments such as such as curing compounds, sealers, old adhesive, paint or any coating that may inhibit bond.

4.2 - Recommended adhesives

As a general rule that applies for all building materials to be fixed in place with adhesive, there is no universal adhesive for installing THINNER on all kinds of surfaces. Since it is not possible to describe all possible cases, we have provided information about the most common situations. First of all, we have divided installation cases into "walls" and "floors" and then into "interior" and "exterior". Depending on the hypothetical stress, on any work to be performed subsequently and on the maximum dimension of the gauged porcelain tile, we have assigned a certain type of THINNER to each category. Starting from this classification, we have thus examined the most common kinds of supporting material. The resulting chart has been sent to all main manufacturers of adhesives that have, in turn, provided the most suitable product for each category.
Please note that all solutions suggested have been submitted by adhesive manufacturers, who guarantee the indications given.
For explanations or more information, contact the product manufacturers (see "9 - Useful contacts").

It is essential to follow all instructions given by adhesive manufacturers. This applies in particular to waiting times before a surface is "set for light foot traffic", "ready for grouting" and "ready to use" that are indicated in the following tables.

	**WALL INSTALLATION(*)** For NEW BUILDINGS and RENOVATION projects that require installation on pre-existing wall cladding			
 **Interiors**	Any residential and commercial environment, in situations where holes and/or cuts are necessary.	THINNER 3plus THINNER 5plus	Two coat plaster, gypsum, drywall, cement backer units	**Pag. 38**
			Existing ceramic tile, marble, stone	**Pag. 39**
 **Exteriors**	Any residential and commercial environment, in situations where holes and/or cuts are necessary.	THINNER 3plus THINNER 5plus	Two coat plaster, one coat plaster, cement backer units	**Pag. 40**

	**FLOOR INSTALLATION(*)** For NEW BUILDINGS and RENOVATION projects that require installation on pre-existing floor coverings			
 **Interiors**	**Residential** (kitchens, bathrooms, living rooms, common apartment block areas and any other residential environment).	THINNER 3plus THINNER 5plus	Concrete, cement based mortar bed, self-leveling underlayment	**Pag. 41**
	Light commercial (offices, offices open to the general public, waiting rooms, retail shops, bathrooms, restaurant dining rooms, car showrooms, bars, cinemas, hospitals/clinics).		Existing ceramic tile, marble, stone	**Pag. 42**
			Gypsum based mortar beds	**Pag. 43**
	Heavy Commercial (common areas of shopping centers, hotel halls, cafeterias, fast food restaurants, dance clubs, hospitals) with the exception of areas subject to heavy concentrated loads (i.e. carts with hard wheels).	THINNER 5plus	Cement-based subfloors, calcium sulphate-based or heated subfloors, self-levelling products, concrete	**Pag. 41**
			Existing ceramic tile, marble slabs, stone	**Pag. 42**
 **Exteriors**	Upon condition that surfaces are sheltered (i.e. porches, covered balconies, etc.) and made totally impervious. The use of sizes that are not larger than 100x100 cm is recommended.	THINNER 3plus THINNER 5plus	Cement-based subfloors, calcium sulphate-based or heated subfloors, self-levelling products, concrete, old ceramic tile, marble slabs, stone	**Pag. 44**

(*) Products with special finishes can have limitations depending on their area of application. Refer to specific collection catalogs

ANSI Material Specifications	
ANSI Specification Number	**Description**
A118.1	Dry-Set Portland Cement Mortar
A118.3	Chemcial Resistant, Water Cleanable Tile Setting and Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive
A118.4	Latex Portland Cement Mortar
A118.5	Chemical Resistant Furan Mortars and Grouts for Tile Installation
A118.6	Standard Cement Grouts for Tile Installation
A118.7	High Performance Cement Grouts for Tile Installation
A118.8	Modified Epoxy Emulsion Mortar/Grout
A118.9	Test Methods and Specifications for Cementitous Backer Units
A118.10	Load Bearing Bonded Waterproof Membrane for Thin-Set Ceramic Tile and Dimension Stone installation
A118.11	Latex-Portland Cement Mortar for EGP
A118.12	Crack Isolation Membrane for Thin-Set Ceramic Tile and Dimension Stone Installation
A118.13	Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation
A118.15	Improved Modified Dry-Set Cement Mortar
A136.1	Organic Adhesives for Installation on Ceramic Tile
A108.19	Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar.

About ADHESIVES
Adhesives are divided into THREE CLASSES, depending on their chemical composition, as established by the UNI EN 12004 standard:
CEMENTITIOUS (**C**): mixture of hydraulic binding agents, aggregates and organic additives (N.B.: to be mixed with water or other liquid additive immediately before use)
REACTIVE (**R**): mixture of synthetic resin, mineral fillers and organic additives, which harden due to a chemical reaction (N.B.: these adhesives may have one or more components)
IN DISPERSION (**D**): mixture of binding and organic agents, namely polymers in aqueous dispersion, organic additives and mineral fillers (N.B.: ready-to-use mixtures)
Depending on their features, adhesives are thus classified:
Class **1**: normal setting adhesives
Class **2**: improved setting adhesives
There are three optional classes:
Class **F**: quick setting adhesives
Class **T**: slip resistant adhesives
Class **E**: adhesives with extended open time
There is a fourth additional class for cementitious adhesives only: adhesives can be classified as DEFORMABLE (S) and divided on the basis of test results under the UNI EN 12002 standard:
Class **S1**: deformable adhesives
Class **S2**: highly deformable adhesives

4.3 - Instructions for installation

4.3.1 - Adhesives: substrate troweling method / substrate and tile troweling method

The installation technique and type of trowel to use depend mainly on the type of adhesive used. This information can be found in the "4.2 - **Recommended adhesives**" section. Depending on the intended use and on the type of adhesive used, all versions of THINNER can be installed both with substrate troweling of adhesive or with substrate and tile troweling of adhesive. In all cases, follow the indications below and make sure that substrate and gauged porcelain tile are entirely covered with adhesive.

Installations must comply with current installation standards of ANSI A108.01, A108.02, A108.1B ANSI A108.5 and all appropriate ANSI A108 installation methods.

SUBSTRATE TROWELING METHOD

This method refers **only** to adhesives that have the indication "substrate troweling" in the "4.2 - **Recommended adhesives**" section. Comb the adhesive over the whole surface to be coverded, using a trowel with the features indicated in the "4.2 - **Recommended adhesives**" section.

SUBSTRATE AND TILE TROWELING METHOD

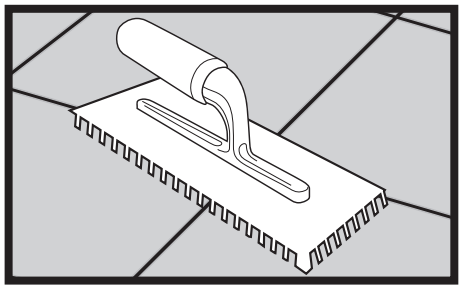


Fig.64 - **European or 'Angled' Trowel**

Fig.65 - Applying mortar to substrate

Apply adhesive with the double-layer method, by spreading the adhesive full-bed on the substrate to cover (**Fig.65**). Apply mortar to the substrate with the flat side of the trowel using a European or angled trowel with tilted teeth at a distance of 1/4" (6 mm) (**Fig.64**).

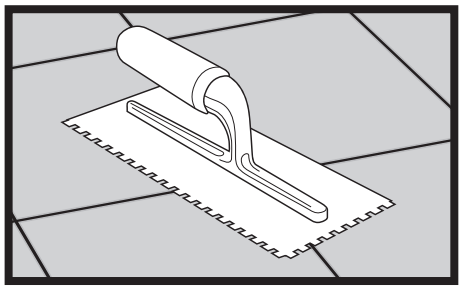


Fig.66 - Notched Teeth Trowel

Fig.67 - Applying mortar to tile back

Apply the adhesive on the under side of the gauged porcelain tile, using a trowel with 1/8" (3 mm) notched teeth (**Fig.66**). Immediately follow with enough mortar to provide appropriate coverage to the back of the tile (**Fig.67**). Notches should run parallel to each other and perpendicular to the long side of the tile (**Fig.68**).

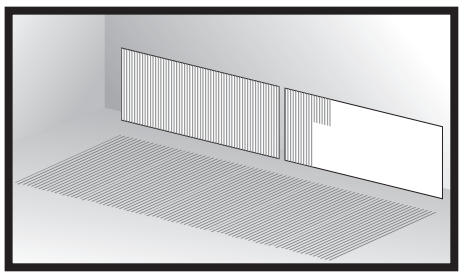


Fig.68

Mortar ridges on both the gauged porcelain tile and on the substrate must be parallel to each other, combing at right angles (perpendicular) to the long side of the tile (**Fig.68**). Take care to keep the ridges straight and consistent height. This is crucial to achieving required coverage.

4.3.2 - Installing 300x100 cm gauged porcelain tile

How to install 300x100 cm size slabs:
Fig.69 - To handle gauged porcelain tile, raise them to their upright position, while grasping them from the top edge. They can then be moved with the help of a second person.
Fig.70 - Rest the gauged porcelain tile on its long side and guide it towards the floor.

4.3.3 - How to remove the air from below the gauged porcelain tile

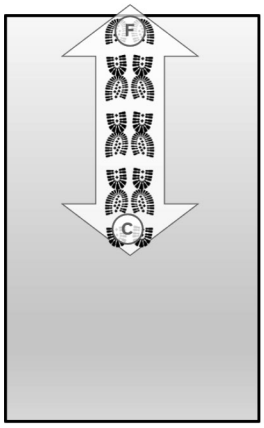
BOTH FOR "SUBSTRATE TROWELING" AND "SUBSTRATE AND TILE TROWELING" METHODS

Fig.71

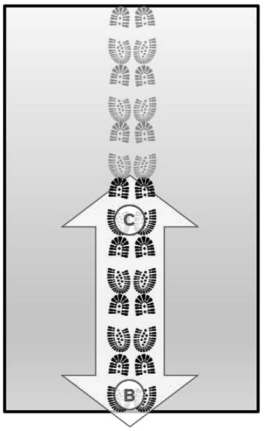
Fig.72

After laying the gauged porcelain tile, make sure it is firmly adhering to the underlying surface to prevent gaps and air bubbles forming.
To do this, use rubber coated trowels (e.g. **Raimondi** "142G" **Fig.71**) for wall or for floor installation, or electrical tile tapping tools with plastic plates (e.g. **Raimondi** "Cucciolo" **Fig.72**) for floor installation.

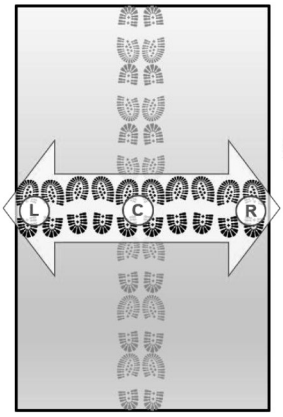
ONLY FOR THINNER 5plus



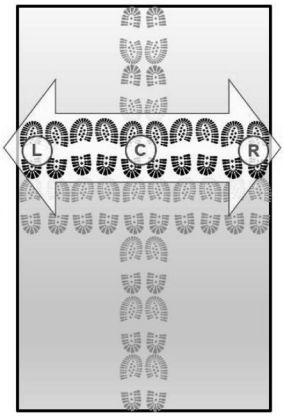
1. C (center) to **F** (front) to **C** (center).
Do not step off of tile



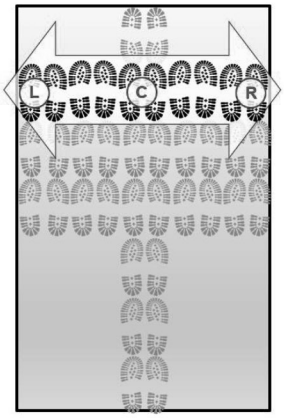
2. C (center) to **B** (back) to **C** (center).
Do not step off of tile



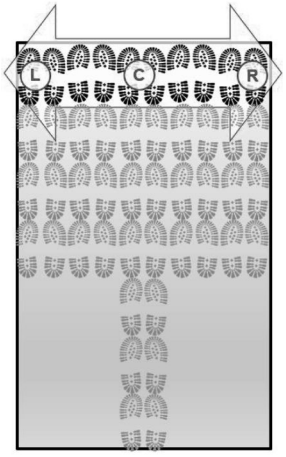
3. C (center) to **L** (left) to **R** (right) to **C** (center).
Do not step off of tile



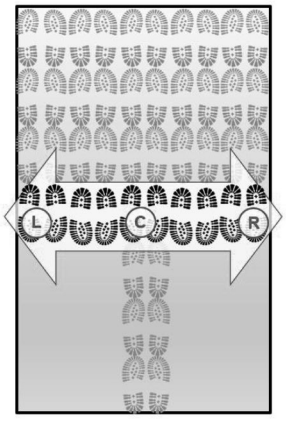
4. C (center) to **L** (left) to **R** (right) to **C** (center).
Do not step off of tile



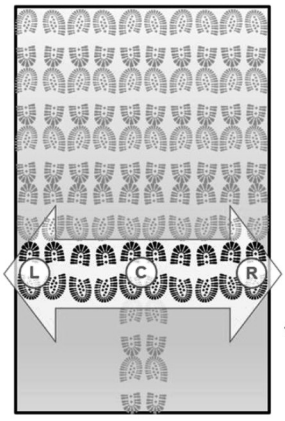
5. C (center) to **L** (left) to **R** (right) to **C** (center).
Do not step off of tile



6. C (center) to **L** (left) to **R** (right) to **C** (center).
Do not step off of tile



7. C (center) to **L** (left) to **R** (right) to **C** (center).
Do not step off of tile



8. C (center) to **L** (left) to **R** (right) to **C** (center).
Do not step off of tile

9. C (center) to **L** (left) to **R** (right) to **C** (center).
Do not step off of tile

10.C (center) to **L** (left) to **R** (right) to **C** (center).
Do not step off of tile

Fig.73 - Step over the outside edge of the tile onto the center point (center point of both length and width) of gauged porcelain tile and walk with small shuffling steps (no more than a half-length of your foot at a time) down the full length of the gauged porcelain tile taking care to stay only in the center portion, then return to the center point and take small shuffling steps (no more than the width of your foot) across the widths of the gauged porcelain tile compressing the mortar ridges and forcing any entrapped air to escape along the edge. Continue this shuffling process until the entire gauged porcelain tile has been compressed in the mortar. This process should take approximately 4-6 minutes for a 118 inch x 39 inch (1mx3m) gauged porcelain tile.

4.3.4 - Installation on curved surfaces

Fig.74 - THINNER 3plus and THINNER 5plus can be laid on curved surfaces, both concave and convex. Products with particular finishes can have certain limitations depending on the geometry of the gauged porcelain tile, so please contact the Panariagroup Research Centre before proceeding with the installation. The instructions for installation are those explained in section "4.3.1 - **Adhesives: substrate troweling method / substrate and tile troweling method**" and "4.3.7 - **Grouting joints and expansion joints**". We recommend installation using the substrate and tile troweling method, please refer to the adhesive manufacturer's instructions also with regard to any measures for securing the position of the gauged porcelain tile during the curing times of the adhesive used (i.e. propping).

4.3.5 - Mechanical leveling systems

THINNER products can only be applied to a substrate that complies with ANSI A108 AN-2 "General Requirements for Subsurfaces". All substrates should be plumb and true, surface deviation should not exceed 1/8" in 10'. For this reason we do not recommend a mechanical leveling system for THINNER 3plus for floors. Because THINNER products are perfectly flat and rectified, an experienced installer should be able to achieve a successful flat installation without the help of a mechanical leveling system.

		THINNER 3plus	THINNER 5plus
	**WALL INSTALLATION**	**OK** **Leveling System**	**OK** **Leveling System**
	**FLOOR INSTALLATION**	**Not Recommended** **Leveling System**	**OK** **Leveling System**

We do **not** suggest leveling systems for THINNER 3Plus on floor for the following reasons:

CHIPPING/BREAKAGE

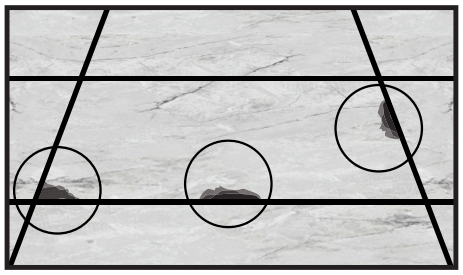


Fig.75 - Mortar displacement under edges and corners (risk of breaking with wheels or heavy loads).

GAUGED PORCELAIN TILE INSTALLATION

Fig.76 - Using these systems with big gauged porcelain tile 3000x1000 mm is complex (There is a potential risk of movement, and consequent mortar displacement, during the positioning of the gauged porcelain tile).

4.3.6 - Joint spacers

Installation is also possible on **construction systems** where the most appropriate industry installation standards, TCNA (Tile Council of North America) and ANSI (American National Standards Institute, Inc.) handbooks are closely followed, and that the support has the characteristics described in paragraph **"4.1.1 - Substrate: technical requirements"**:

Fig.77 (left)
After placing tiles in mortar, push and pull the tile panels collapsing the setting material and placing grout joint spacers as pictured. For this use, we recommended a joint of at least 1/16" (2 mm) for interior installations. Slide back and forth to collapse trowel notches and ensure 100% mortar contact.

4.3.7 - Grouting joints and expansion joints

THINNER has an expansion coefficient equal to 7.0x10-6 °C^{-1} (e.g. for a temperature range of 70 °C (158 °F), expansion is 0.5 mm per linear meter). **It is essential that** movement (expansion) joints should be provided to comply with TCNA (Tile Council of North America) method EJ171. Despite expansion being minimal, it is **mandatory** to install all types of THINNER, both for walls and floors, in compliance with the following instructions:

Wall installation

Interiors	**Joint between gauged porcelain tile necessary.** Minimum size is at least 1/16" (2 mm).	**Expansion joints are necessary.** The size and position of joints must be established by the Design Professional and the Installation Supervisor.
Exteriors	**Joint between gauged porcelain tile necessary.** Minimum size is at least 1/4" (5 mm).	**Expansion joints are necessary.** The size and position of joints must be established by the Design Professional and the Installation Supervisor.

Floor installation

Interiors	**Joint between gauged porcelain tile necessary.** Minimum size is at least 1/16" (2 mm).	**Expansion joints are necessary.** The size and position of joints must be established by the Design Professional and the Installation Supervisor.
Exteriors Exterior surface must be covered (i.e. porches, covered balconies, etc.). Sizes larger than 39"x39" (100 x 100cm) are not recommended.	**Joint between gauged porcelain tile necessary.** Minimum size is at least 1/4" (5 mm).	**Expansion joints are necessary.** The size and position of joints must be established by the Design Professional and the Installation Supervisor.

Grouting the Tile

Grout the joints with grouts recommended by the mortar manufacturer, according to installation needs. All grout joints should be packed full and free of voids. Grout joints for floor and wall interior installations; should be no less than 1/16" (2 mm). For exterior installations; grout joints should be no less than 1/4" (5 mm) wide.

Movement (expansion) Joints

Expansion, construction and contraction joints must be incorporated into the tile installation. Perimeter and field movement joints are required for all tile installations. For more specific information; consult the most current TCNA (Tile Council of North America) Handbook for Ceramic Tile Installations; Method EJ171.

FURTHERMORE:

Interiors **Wall installation** **Floor installation**	**Exteriors** **Wall installation** **Floor installation**

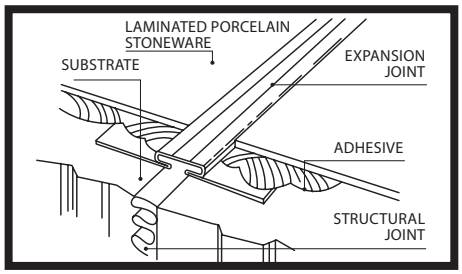


Fig.78 - In correspondence with a structural joint in the screed, it is mandatory to install an expansion joint with a width that is at least the size of the existing one.

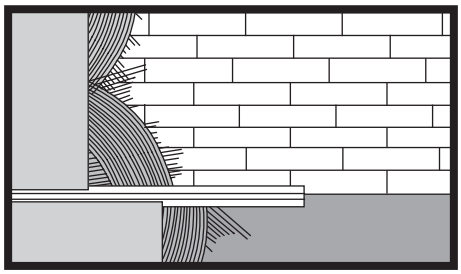


Fig.79 - If there are joints between surfaces of different types (e.g. reinforced concrete and bricks), it is mandatory to install an expansion joint.

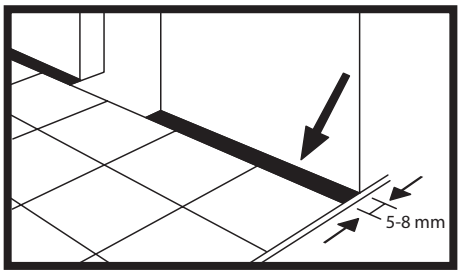


Fig.80 - Around fixed elements of the supporting surface, such as walls, steps, columns, etc., **it is mandatory** to provide at least 1/4" (5 mm) peripheral joints.

For suggestions on the type of expansion joint to use, see **"6 - Connecting Profiles, Finishing and Trim Pieces"** along with materials and recommendation of the most current TCNA (Tile Council of North America) Handbook for Ceramic Tile Installations; Method EJ171.

05

Cleaning and care

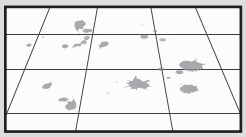
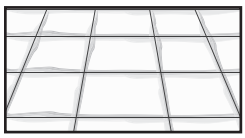
■ CLEANING AFTER INSTALLATION

Cleaning "after installation" is necessary for removing residue of jobsite debris, grout, and thinset. This operation is required after installation for both glazed and unglazed tiles. Caution: Never clean hot tiles (exposed to sunlight in the summer) since this can cause the cleaning chemicals to become stronger. In the hot weather, clean during the cooler hours of the day. Non-slip tiles: due to their particular rough or non-slip textures are more difficult to clean. Therefore, pay particular attention to your cleaning tools and methods and use of a good scrub brush or buffer with white or beige cleaning pads.

List of acid based cleaners

Manufacturer	Product
Aqua Mix	Sulfamic Acid Crystals
	Phosphoric Acid Substitute
Fila	Deterdek
Miracle Sealants	Heavy Duty Acid Cleaner
	Phosphoric Acid Cleaner
Laticrete Stonetech	Restore Acidic Cleaner

If after installation cleaning has not been correctly performed

Grout Used	What do you see?	What should you do?
Cementitious grout	Residues, glossy films. 	Consult the grout manufacturer if you have any questions. Repeat washing after installation as described above. If necessary, use a higher concentration of the same detergent.
Epoxy grout	Marks, in particular around the grouting joints. 	Once it has hardened, epoxy grout is very difficult to remove. Contact the grout manufacturer for recommended methods and cleaners.

■ GROUT SEALER

Grout Used	Manufacturer*	Product Name	Method of Use
Cementitous grout	Aqua Mix	Sealers Choice Gold	Follow manufacturer's instructions
		Enrich 'N' Seal	Follow manufacturer's instructions
		Penetrating Sealer	Follow manufacturer's instructions
		Grout Sealer	Follow manufacturer's instructions
		Sameday Grout Sealer	Follow manufacturer's instructions
	Fila	Fugaproof	Follow manufacturer's instructions
		MP90 ECO	Follow manufacturer's instructions
	Miracle Sealants	511 Porous Plus	Follow manufacturer's instructions
		511 Aerosol Spray On Grout Sealer	Follow manufacturer's instructions
		511 Seal & Enhance	Follow manufacturer's instructions
		511 Impregnator	Follow manufacturer's instructions
	Laticrete Stonetech	BulletProof Sealer	Follow manufacturer's instructions
		Heavy Duty Sealer	Follow manufacturer's instructions
		Enhancer Pro Sealer	Follow manufacturer's instructions

■ NON-SLIP TREATMENT

Manufacturer	Product Name	Method of Use
Miracle Sealants	511 Anti Slip	Follow manufacturer's instructions

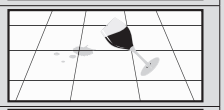
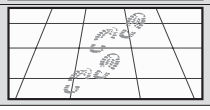
■ DAILY CLEANING

Ceramic tile is one of the most durable and maintenance friendly surfaces you can choose for your walls, floors, countertops, etc. With proper care and minimum maintenance, it will retain its original beauty and luster for many years. Generally, all that is necessary to keep your tile looking as good as new is a quick wipe with a clean damp cloth or mop. Prompt cleanup of spills and regular cleaning will keep your ceramic tile surfaces looking their best. If a cleaner is necessary, Florida Tile recommends the use of low VOC (volatile organic compound), neutral pH, non-hazardous, and non-polluting products like **Aqua Mix**'s Concentrated Stone & Tile Cleaner or **Miracle Sealants**' Tile and Stone Cleaner. Read and follow label directions for all cleaners and sealers.

List of neutral cleaners

Manufacturer	Product
Aqua Mix	Concentrated Stone & Tile Cleaner
Fila	FILACleaner
Miracle Sealants	Tile and Stone Cleaner
Laticrete Stonetech	Stone & Tile Cleaner

If daily cleaning has been done using unsuitable detergents

Tile to be cleaned	Type of discoloration	Corrective method
THINNER 3plus THINNER 5plus	Opaque stains visible against light / floor is glossier than the spare pieces that have not been installed 	Use a cleaner like Miracle Sealants Tile and Stone Cleaner, Aqua Mix Heavy Duty Tile & Grout Cleaner, Tile & Stone Cleaner, Phosphoric Acid Cleaner or Heavy Duty Acid Cleaner. Follow the directions on the container.
	Opaque stains visible against light when in contact with various types of liquid 	
	Foot traffic marks remain 	

■ EXTRA-DUTY CLEANING

Tile to clean	Type of discoloration	Type of cleaner	Name of cleaner	Manufacturer	Method of Use
THINNER 3plus and 5plus	Coffee, soft drinks, fruit juice	Alkaline based cleaner	Heavy Duty Tile & Grout Cleaner	Aqua Mix	Follow manufacturer's instructions
			Liquid Poultice and Tile & Stone Cleaner	Miracle Sealants	Follow manufacturer's instructions
			KlenzAll Cleaner	Laticrete Stonetech	Follow manufacturer's instructions
			PS87	Fila	Follow manufacturer's instructions
	Grease, dirt from traffic, deep-cleaning	Alkaline based cleaner	Heavy Duty Tile & Grout Cleaner	Aqua Mix	Follow manufacturer's instructions
			PS87	Fila	Follow manufacturer's instructions
			KlenzAll Cleaner	Laticrete Stonetech	Follow manufacturer's instructions
			Porcelain & Ceramic Tile Cleaner	Miracle Sealants	Follow manufacturer's instructions
	Wine	Oxidising cleaner	PS87, SR95	Fila	Follow manufacturer's instructions
			DeepKlenz Cleaner	Laticrete Stonetech	Follow manufacturer's instructions
			Liquid Poultice and Tile & Stone Cleaner	Miracle Sealants	Follow manufacturer's instructions
	Lime residue	Acid based cleaner	Sulfamic Acid Crystals	Aqua Mix	Follow manufacturer's instructions
			Deterdek	Fila	Follow manufacturer's instructions
			Restore Acidic Cleaner	Laticrete Stonetech	Follow manufacturer's instructions
			Heavy Duty Acid Cleaner or Phosphoric Acid Cleaner	Miracle Sealants	Follow manufacturer's instructions
	Rust	Acid based cleaner	Sulfamic Acid Crystals	Aqua Mix	Follow manufacturer's instructions
			Deterdek	Fila	Follow manufacturer's instructions
			Restore Acidic Cleaner	Laticrete Stonetech	Follow manufacturer's instructions
			Heavy Duty Acid Cleaner	Miracle Sealants	Follow manufacturer's instructions
	Tire, pencil and metal marks	Abrasive paste	Phosphoric Acid Substitute mixed with Nanoscrub	Aqua Mix	Follow manufacturer's instructions
			PS87	Fila	Follow manufacturer's instructions
			DeepKlenz Cleaner	Laticrete Stonetech	Follow manufacturer's instructions
			Porcelain & Ceramic Tile Cleaner	Miracle Sealants	Follow manufacturer's instructions
	Ink, marker	Solvent based cleaner	Sealer & Coating Remover	Aqua Mix	Solvents shoud be applied undiluted on the stain. Let them sit for about 15/ 20 seconds. If neccassary repeat. Follow the solvent based cleaners directions.
			PS87	Fila	Follow manufacturer's instructions
			Heavy Duty Coating Stripper	Laticrete Stonetech	Follow manufacturer's instructions
			Miracle Heavy duty cleaner	Miracle Sealants	Solvents shoud be applied undiluted on the stain. Let them sit for about 15/ 20 seconds. If neccassary repeat. Follow the solvent based cleaners directions.
	Dirt from cement based grout	Grout cleaner	Grout Deep Clean	Aqua Mix	Follow manufacturer's instructions
			Restore Acidic Cleaner	Laticrete Stonetech	Follow manufacturer's instructions
			Fuganet	Fila	Follow manufacturer's instructions
Decorative tile	Any	Neutral wax free cleaner	Heavy Duty Tile & Grout Cleaner	Aqua Mix	Use water and a neutral wax free cleaner. NEVER use alchol, acid, solvents, abrasive cleaners, abrasive sponges, or pads.
			Fila Cleaner	Fila	
			Stone & Tile Cleaner	Laticrete Stonetech	
			Tile and Stone Cleaner	Miracle Sealants	

CAUTION:

- These recommendations were reviewed with the manufacturer's of the cleaners and sealers. Conditions, products, recommendations and names constantly change, consult the manufacturer's website and technical phone lines, if you have additional questions. Manufacturer's contact information is listed on Page 34 under Additional Resources.
- Do not use harsh cleaning agents such as steel wool pads or strong acids, which can scratch or damage the surface of your tile.
- Always do a small test with sealers & cleaners to insure desired results.
- Read and follow label directions for all grouts, cleaners and sealers.

06

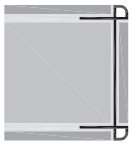
Connecting profiles, finishing and trim pieces

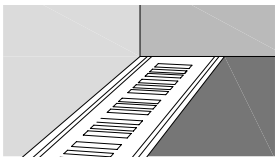
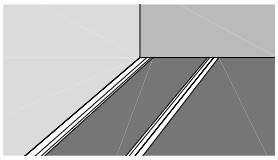
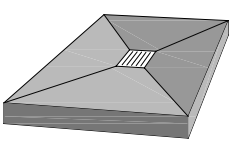
You can complete all versions of THINNER walls and floors with the profiles available in the market.

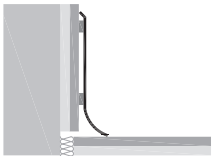
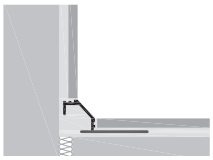
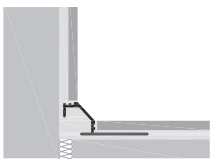
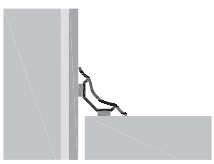
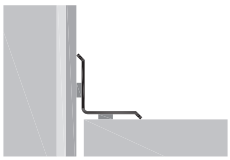
Here below you will find some possible solutions using the profiles sold by the top manufacturers. The solutions described have different characteristics and sizes, depending on the manufacturer, and cannot be described in detail herein. The drawings and instructions for use are therefore indicative and of a general nature. For more information regarding the complete ranges offered, refer to the manufacturer. You will find a list of references in "**9 – Useful Contacts**".

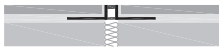
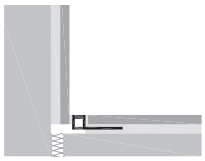
LOXCREEN	www.loxcreenflooring.com
SCHLUTER®-SYSTEMS	www.Schluter.com
WEDI	us.wedi.de

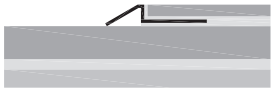
PROGRESS PROFILES	www.progressprofiles.com
DURAL	www.dural.de/en
LATICRETE	https://laticrete.com

PROFILES FOR DOORS AND WORK TOPS	**Manufacturer**	**Best-selling products**		
Full profile		For thick.(mm)	3.5	5.5
	Progress Profiles	Protop	●	-
Profiles with tile compartment		For thick.(mm)	3.5	5.5
	Progress Profiles	Protect J, T, Q	●	-

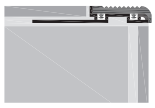
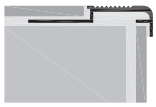
SHOWER SYSTEMS	**Manufacturer**	**Best-selling products**		
Stainless steel grill		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Kerdi-Line-H	●	●
	Dural	BASIC-LINE	●	●
	Progress Profiles	Proshower Design	●	●
	Wedi	Plano Linea	●	●
	Laticrete	HYDRO BAN Linear Drains	●	●
Grill with tile compartment		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Kerdi-Line-D	●	●
	Dural	TI-LINE	●	●
	Progress Profiles	Proshower Tile	●	●
	Wedi	Riolito piastrellabile	●	●
Shower base system		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Kerdi-Shower	●	●
	Dural	TILUX	●	●
	Wedi	Fundo Primo / Plano	●	●

WALL/FLOOR AND INNER CORNER	**Manufacturer**	**Best-selling products**		
Bullnose		For thick.(mm)	3.5	5.5
	Progress Profiles	Bullnose 40	●	-
	Dural	Construct	●	●
Bullnose profile		For thick.(mm)	3.5	5.5
	Progress Profiles	Prointer KL ALL	●	-
Minimum quarter round cove		For thick.(mm)	3.5	5.5
	Progress Profiles	Proshell D ALL	●	-
Quarter round cove		For thick.(mm)	3.5	5.5
	Progress Profiles	Proshell R ALL	●	-
Obtuse angle profiles		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	ECK-KHK	●	●
	Progress Profiles	Proseal	●	-
	Dural	Duracove	●	●
Right angle profiles		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	ECK-KI	●	●
	Progress Profiles	Probat	●	-

EXPANSION JOINTS	Manufacturer	Best-selling products		
Floor joints		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Dilex-BWS	●	●
	Progress Profiles	Proflex	●	●
	Dural	Duraflex	●	●
Perimeter joints		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Dilex-BWA	●	●
	Progress Profiles	Proflex 5 PR	●	●
	Dural	Duraflex SF	●	●

SURMOUNTED ELEMENTS AND COVERING PROFILES	Manufacturer	Best-selling products		
Connection		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Reno-U	●	●
	Progress Profiles	Proslider KL ALL	●	-
Surmounted element		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Reno-T	●	●
	Progress Profiles	Profloor 24	●	-
	Dural	LPTE	●	●
Straight edge covering profile		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Quadec	●	●
	Progress Profiles	Projolly Square	●	●
	Dural	Squareline	●	●
Rounded edge covering profile		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Rondec	●	●
	Progress Profiles	Projolly Quart	●	●

CURVED PROFILES	Manufacturer	Best-selling products		
Metal profile for curves		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Schiene	●	●
	Progress Profiles	Curve	●	-
	Dural	Z-FLEX	●	●

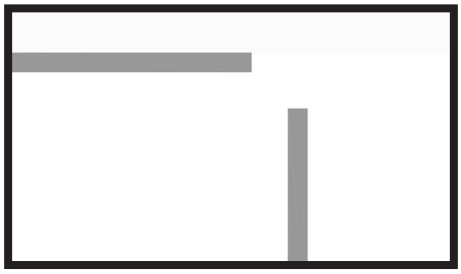
STEPS AND OUTER CORNERS	Manufacturer	Best-selling products		
Profiles for protruding steps		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Rondec	●	●
	Progress profiles	Prostyle KL10	●	-
Reinforced profiles for steps		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	TREP-E	●	●
	Dural	Diamondstep	●	●
	Progress Profiles	Prostair Acc	●	-
Rounded profiles with non-slip tread		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	TREP-GK	●	●
	Progress Profiles	Prostair KL 20	●	-
Rounded profile		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Rondec	●	●
	Progress Profiles	Projolly Quart	●	●
Straight edge profile		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	Quadec	●	●
	Progress Profiles	Projolly Square	●	●
	Dural	Squareline	●	●
Thin corner profile		For thick.(mm)	3.5	5.5
	Progress Profiles	Prokerlam LINE	●	-
Corner profiles		For thick.(mm)	3.5	5.5
	SCHLUTER®-Systems	ECK-K	●	●
	Progress Profiles	Proedge	●	-
	Dural	Duragard	●	●

07

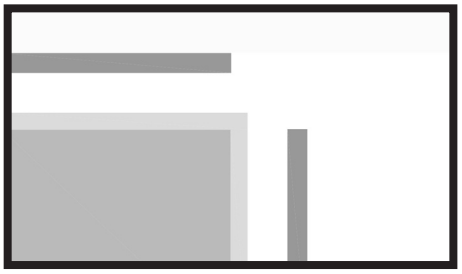
Making corners during installation

7.1 - Solution 1

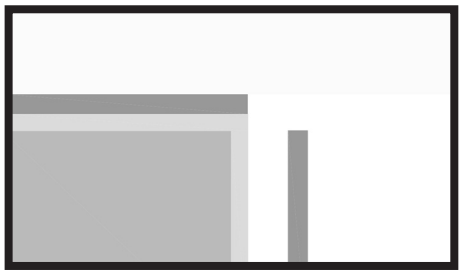
It is possible to make "handmade" corner finishes with an attractive appearance and without using corner profiles.



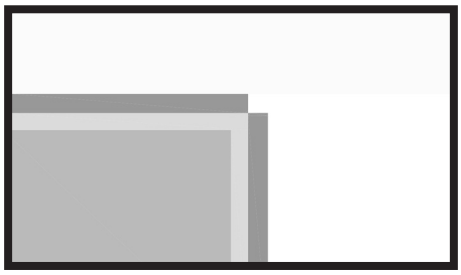
1 - Gauged porcelain tile of THINNER in all types.



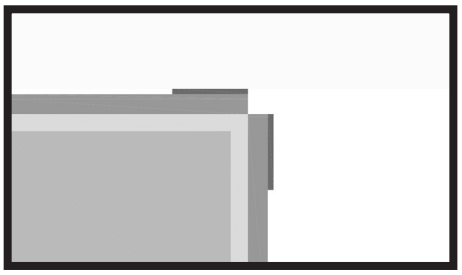
2 - Spread adhesive on the support.



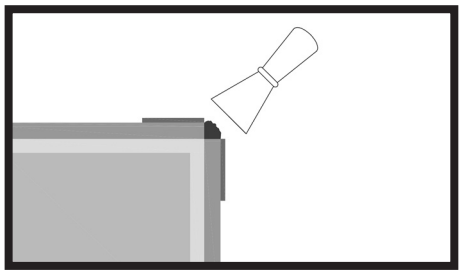
3 - Lay the first gauged porcelain tile.



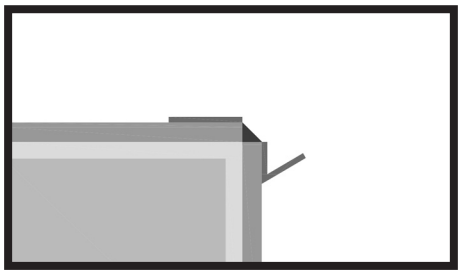
4 - Lay the second gauged porcelain tile.



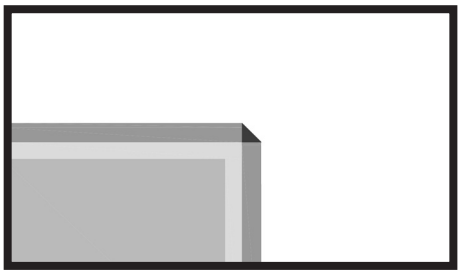
5 - Place masking tape on the ends of the gauged porcelain tile.



6 - Apply the epoxy grout which matches the porcelain using a trowel.

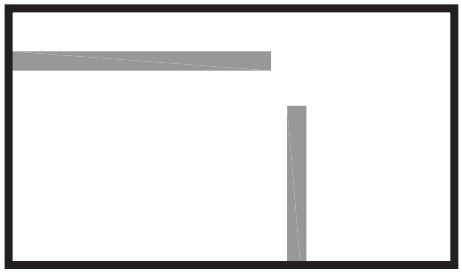


7 - Remove the masking tape.

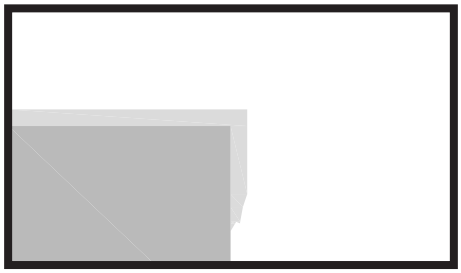


8 - The corner is now ready.

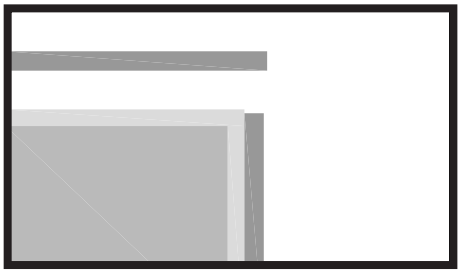
7.2 - Solution 2



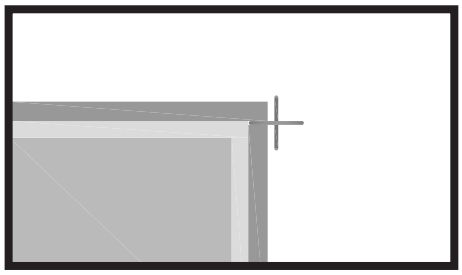
1 - Gauged porcelain tile of THINNER in all types.



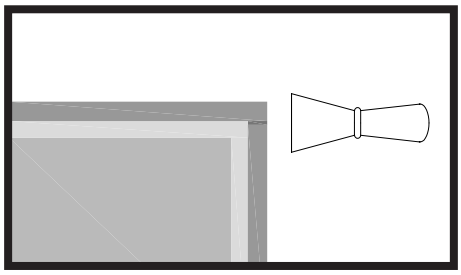
2 - Spread adhesive on the support.



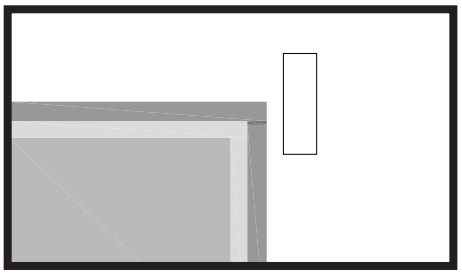
3 - Lay the first gauged porcelain tile.



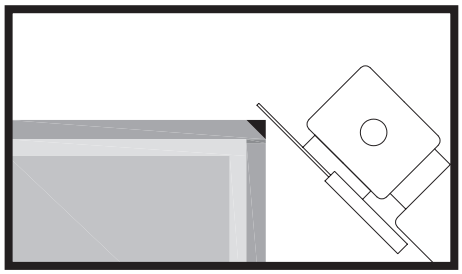
4 - Lay the second gauged porcelain tile using 1 mm cross spacers.



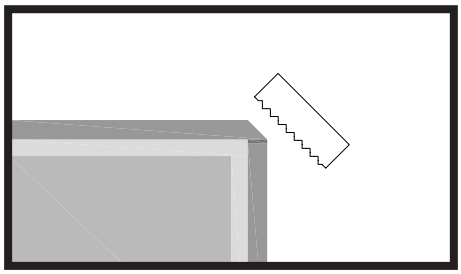
5 - After adhesive has cured, apply epoxy grout with a trowel (*****).



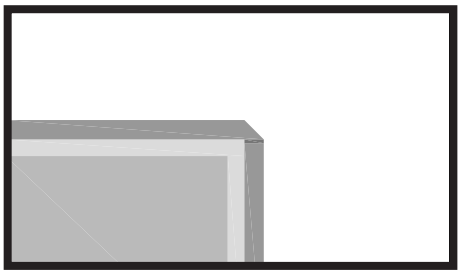
6 - Remove excess grout with a sponge moistened in warm water and alcohol (*****).



7 - After grout has cured, make a 45° cut with a hand-held angle grinder or grinder fitted on a guide, such as the Jolly-Angle bevelling machine made by **Sigma**. For round chamfers use Bull type guide made by **Raimondi**. (*****)



8 - Smoothen the edge with an abrasive sponge.



9 - The corner is now ready.

(*) This type of product must be removed immediately and thoroughly since epoxy grouts harden very rapidly, even in just a few minutes. Strictly observe the cleaning procedures specified by the manufacturer of the grout used.

08

Technical information

8.1 - Technical features

	Technical features	Test method		Required values ANSI A137.3	Average values THINNER 3plus	Average values THINNER 5plus
	Water absorption	ASTM C373		≤ 0.5%	**0.1% (*)**	**0.1% (*)**
	Modulus of rupture	ASTM C1505		≥ 6000 PSI	**≥ 6000 PSI**	**≥ 6000 PSI**
	Breaking strength	ASTM C1505		Thickness 3.5-4.9 mm: ≥ 85 lbf	**≥ 85 lbf**	-
				Thickness 5.0-6.5 mm: ≥ 175 lbf	-	**≥ 175 lbf**
	Abrasion resistance	ASTM C1243		≤ 175 mm^3	**≤ 175 mm^3**	**≤ 175 mm^3**
	Linear thermal expansion	ASTM C372		No provision	**α ≤ 8 X 10^{-6} $°C^{-1}$ α ≤ 4.4 X 10^{-6} $°F^{-1}$**	**α ≤ 8 X 10^{-6} $°C^{-1}$ α ≤ 4.4 X 10^{-6} $°F^{-1}$**
	Thermal shock resistance	ASTM C484		No alterations	**Resistant**	**Resistant**
	Frost-resistance	ASTM C1026		As indicated by the manufacturer	**Resistant**	**Resistant**
	Chemical resistance (**)	ASTM C650		As indicated by the manufacturer	**Class A Resistant**	**Class A Resistant Class C (Glossy)**
	Stain resistance	ASTM C1378		As indicated by the manufacturer	**Class A Resistant Class C (Soft)**	**Class A Resistant Class C (Glossy)**
	Slip resistance	-		-	**Refer to the collection catalog**	**Refer to the collection catalog**
	Shade variation	ANSI A137.1 / 5.4		As indicated by the manufacturer	**Refer to the collection catalog**	**Refer to the collection catalog**
	Flame spread	ASTM E84		-	**Class A**	**Class A**
	Robinson floor tester (***)	ASTM C627		As indicated by the manufacturer	**≥ 6 cycles Light Commercial (Over Concrete)**	**≥ 12 cycles Heavy Commercial (Over Concrete)**
	Thermal conductivity	EN 12524		-	**λ = 1,3 W/m °K λ = 0.7 BTU/ft h °F**	**λ = 1,3 W/m °K λ = 0.7 BTU/ft h °F**
	Elastic modulus (Young's Modulus)	-		-	**55 - 60 GPa**	**55 - 60 GPa**
	Density	-		-	**2300 -2500 kg/m^3**	**2300 -2500 kg/m^3**
	Sound absorption coefficient α	UNI EN ISO 11654		-	**0.01 - 0.02**	**0.01 - 0.02**
 	Dimensions	Nominal size	ASTM C499	± 3.0% of nominal dimensions	**Compliant**	**Compliant**
		Average facial dimension	ASTM C499	± 0.25% or max ± 0.03" (± 0.8 mm)	**Compliant**	**Compliant**
		Thickness	ASTM C499	± 0.5 mm	**Compliant**	**Compliant**
		Wedging	ASTM C502	± 0.25% or max ± 0.03"(± 0.8 mm)	**Compliant**	**Compliant**

(*) Average value referred to ceramic material only
(**) Excluding hydrofluoridric acid and its derivatives
(***) Products with special finishes may have limitations for use; check the individual collection catalogs

8.2 - Information for tender specifications

Title	Description
Thickness	**THINNER 3plus**: 3.5 mm
	THINNER 5plus: 5.5 mm
Sizes	**THINNER 3plus**: refer to the collection catalog
	THINNER 5plus: refer to the collection catalog
Product characteristics	Florida Tile THINNER laminated porcelain tiles, produced in a maximum size of 3000x1000 mm and 3mm/5mm thick, reinforced with fiberglass mesh, obtained from raw materials of the highest quality and purity (light clay, feldspar and ceramic pigments with high chromatic performance), and manufactured by dry pressing on a belt of atomized powder, subsequently sintered by means of industrial firing at temperatures exceeding 1200 °C (2192 °F). The innovative THINNER manufacturing process produces a final product which is light, flat and flexible, but at the same time compact, non-absorbent, frost-resistant, resistant to stains, chemical attack and thermal shock. The application of the fiberglass mesh gives the product high resistance and extreme versatility and ease of use for a wide range of applications in the architectural world.
Series and colours	Refer to the collection catalog
Type of surface	Unglazed (UGL)
Shaping method	Pressing
Water absorption in accordance to ASTM C373 (average value)	0.1% (*)
Compliance with ANSI A137.3	THINNER collections are in compliance with the regulations required for first quality products in USA through ANSI A137.3.
Quality and environmental certifications	The conservation of the product characteristics is guaranteed by the Quality Management System put into practice by Panarigroup in its plants and certified in accordance with UNI EN ISO 9001:2008. THINNER collections are manufactured in plants with UNI EN ISO 14001:2004 certified Environmental Management Systems (internationally recognised standard) and EMAS (Regulation 1221/09 - eco-management and audit community system). THINNER collections helps to meet the criteria for obtaining LEED credits. The product contains no VOC (volatile organic compounds). The Environmental Product Declaration (EPD) is available, this tool communicates clearly the environmental performances of THINNER collections based on its Life Cycle Assessment (LCA).
Declared safety features	Slip resistance • ANSI A326.3 method: Refer to the collection catalog. • B.C.R. Tortus method: Refer to the collection catalog. • DIN 51130 method: Refer to the collection catalog. • DIN 51097 method: Refer to the collection catalog.
	Release of toxic/harmful substances under ISO 10545.15: none
	Fire reaction / Flame spread (ASTM E-84) • **THINNER 3plus**: Class A • **THINNER 5plus**: Class A

(*) Average value referred to ceramic material only

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Useful contacts

The companies mentioned in this manual are our own choices and are therefore recommended but not mandatory.

Mortars

LATICRETE® International
One LATICRETE Park North
Bethany, CT 06524
1-800-243-4788 x235
https://laticrete.com

Mapei Americas
1144 E. Newport Center Drive
Deerfield Beach, Florida 33442
1-800-922-6273
www.mapei.com

TEC (HB Fuller Construction Products)
1105 South Frontenac Street
Aurora, IL. 60504
1-800-832-9023
www.tecspecialty.com

Profiles

LATICRETE® International
One LATICRETE Park North
Bethany, CT 06524
1-800-243-4788 x235
https://laticrete.com

SCHLUTER®-Systems L.P.
194 Pleasant Ridge Road
Plattsburgh, NY 12901
1-800-472-4588
www.schluter.com

Loxcreen Flooring Group
800 S. Pemiscot Street
Hayti, MO. 63851
888-FLR-TRIM (357-8746)
www.loxcreenflooring.com

Dural USA
711 North Varnell Road
Tunnel Hill, GA 307554
www.USA.dural.com
scottcarroll@duralusa.us
706-519-0394

WEDI
171 S. Gary Avenue
Carol Stream, Il 60188
877-933-WEDI (9334)
http://us.wedi.de

Branch Office & Warehouse
Progress Profiles America Inc.
4 Middlebury Blvd. (unit 14),
Randolph, 07869,
New Jersey, U.S.A.
Tel. 973-584-2650
Fax 973-584-2657
Email: usa@progressprofiles.com

Cleaners

Aqua Mix (divison of Custom Building Products)
13001 Seal Beach Blvd Suite 200
Seal Beach, CA 90740
877-278-2311
www.custombuildingproducts.com/products/aqua-mix

Fila Chemicals USA
10800 N.W. 21st Street #170
Miami, FL 33172
1-305-513-0708
http://www.filasolutions.com

Miracle Sealants Company
12318 Lower Azusa Road
Arcadia, California 91006
1-800-350-1901 ext. 1
www.miraclesealants.com

The companies mentioned in this manual are our own choices and are therefore recommended but not mandatory.

Trowels

Sigma (US Importer: European Tile Masters)
1830 Vista Way
Margate, FL 33063
954-917-3599
www.europeantilemasters.com

Raimondi (US Importer: Donnelly Dist., LLC.)
N 56 W 24790 N. Corporate Circle, Unit A
Sussex, WI. 53089
1-800-625-6686
www.donnellydist.com

Supporting panels and mat

SCHLUTER®-Systems L.P.
194 Pleasant Ridge Road
Plattsburgh, NY 12901
800-472-4588
www.schluter.com

Mapei Americas
1144 E. Newport Center Drive
Deerfi eld Beach, Florida 33442
1-800-922-6273
www.mapei.com

GUTJAHR
Systemtechnik GmbH
Philipp-Reis-Str. 5-7
D-64404 Bickenbach/Bergstraße
Telephone: +49 (0) 62 57 - 9306-0
Fax: +49 (0) 62 57 - 9306-31
E-mail: info(at)gutjahr.com
Internet: www.gutjahr.com

Thin Tile / Glass Cutters

Bohle America, Inc
10924 Granite Street · Suite 200
Charlotte, NC 28273
704-247-8400
www.bohleamerica.com

Thin Tile Installation Tools

Sigma (US Importer: European Tile Masters)
27 Copper Ridge Rd
Trout Creek, MT 59874
954-917-3599
www.europeantilemasters.com

Raimondi (US Importer: Donnelly Dist., LLC.)
N 56 W 24790 N. Corporate Circle, Unit A
Sussex, WI. 53089
1-800-625-6686
www.donnellydist.com

Russo Trading
4235 N. 127th St.
Brookfield, WI 53005
855-782-8665
www.rtcproducts.com

Stucco / Plaster

Dryvit Systems, Inc.
One Energy Way
West Warwick, RI 02893
1-800-556-7752
www.dryvit.com

Parex USA
4125 E. LaPalma Ave., Suite 250
Anaheim, CA 92807
1-800-226-2424
www.parexusa.com

STO Corp.
3800 Camp Creek Parkway SW
Building 1400, Suite 120
Atlanta, Georgia 30331
1-800-221-2397
www.stocorp.com

Adhesives attachment

As a general rule that applies for all building materials to be fixed in place with adhesive, there is no universal adhesive for installing THINNER on all kinds of surfaces. Since it is not possible to describe all possible cases, we have provided information about the most common situations. First of all, we have divided installation cases into "walls" and "floors" and then into "interior" and "exterior". Depending on the hypothetical stress, on any work to be performed subsequently and on the maximum dimension of the gauged porcelain tile, we have assigned a certain type of THINNER to each category. Starting from this classification, we have thus examined the most common kinds of supporting material. The resulting chart has been sent to all main manufacturers of adhesives that have, in turn, provided the most suitable product for each category.
Please note that all solutions suggested have been submitted by adhesive manufacturers, who guarantee the indications given.
For explanations or more information, contact the product manufacturers (see "9 - Useful contacts").

It is essential to follow all instructions given by adhesive manufacturers. This applies in particular to waiting times before a surface is "set for light foot traffic", "ready for grouting" and "ready to use" that are indicated in the following tables.

	**WALL INSTALLATION(*)** For NEW BUILDINGS and RENOVATION projects that require installation on pre-existing wall cladding			
 **Interiors**	Any residential and commercial environment, in situations where holes and/or cuts are necessary.	THINNER 3plus THINNER 5plus	Two coat plaster, gypsum, drywall, cement backer units	**Pag. 38**
			Existing ceramic tile, marble, stone	**Pag. 39**
 **Exteriors**	Any residential and commercial environment, in situations where holes and/or cuts are necessary.	THINNER 3plus THINNER 5plus	Two coat plaster, one coat plaster, cement backer units	**Pag. 40**

	**FLOOR INSTALLATION(*)** For NEW BUILDINGS and RENOVATION projects that require installation on pre-existing floor coverings			
 **Interiors**	**Residential** (kitchens, bathrooms, living rooms, common apartment block areas and any other residential environment).	THINNER 3plus THINNER 5plus	Concrete, cement based mortar bed, self-leveling underlayment	**Pag. 41**
	Light commercial (offices, offices open to the general public, waiting rooms, retail shops, bathrooms, restaurant dining rooms, car showrooms, bars, cinemas, hospitals/clinics).		Existing ceramic tile, marble, stone	**Pag. 42**
			Gypsum based mortar beds	**Pag. 43**
	Heavy Commercial (common areas of shopping centers, hotel halls, canteens, fast food restaurants, dance clubs, hospitals) with the exception of areas subject to heavy concentrated loads (i.e. carts with hard wheels).	THINNER 5plus	Cement-based subfloors, calcium sulphate-based or heated subfloors, self-levelling products, concrete	**Pag. 41**
			Existing ceramic tile, marble slabs, stone	**Pag. 42**
 **Exteriors**	Upon condition that surfaces are sheltered (i.e. porches, covered balconies, etc.) and made totally impervious. The use of sizes that are not larger than 100 x 100 cm is recommended.	THINNER 3plus THINNER 5plus	Cement-based subfloors, calcium sulphate-based or heated subfloors, self-levelling products, concrete, old ceramic tile, marble slabs, stone	**Pag. 44**

(*) Products with special finishes can have limitations depending on their area of application. Refer to specific collection catalogs.

ANSI Material Specifications	
ANSI Specification Number	**Description**
A118.1	Dry-Set Portland Cement Mortar
A118.3	Chemcial Resistant, Water Cleanable Tile Setting and Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive
A118.4	Latex Portland Cement Mortar
A118.5	Chemical Resistant Furan Mortars and Grouts for Tile Installation
A118.6	Standard Cement Grouts for Tile Installation
A118.7	High Performance Cement Grouts for Tile Installation
A118.8	Modified Epoxy Emulsion Mortar/Grout
A118.9	Test Methods and Specifications for Cementitous Backer Units
A118.10	Load Bearing Bonded Waterproof Membrane for Thin-Set Ceramic Tile and Dimension Stone installation
A118.11	Latex-Portland Cement Mortar for EGP
A118.12	Crack Isolation Membrane for Thin-Set Ceramic Tile and Dimension Stone Installation
A118.13	Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation
A118.15	Improved Modified Dry-Set Cement Mortar
A136.1	Organic Adhesives for Installation on Ceramic Tile
A108.19	Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar.

About ADHESIVES
Adhesives are divided into THREE CLASSES, depending on their chemical composition, as established by the UNI EN 12004 standard:
CEMENTITIOUS (**C**): mixture of hydraulic binding agents, aggregates and organic additives (N.B.: to be mixed with water or other liquid additive immediately before use)
REACTIVE (**R**): mixture of synthetic resin, mineral fillers and organic additives, which harden due to a chemical reaction (N.B.: these adhesives may have one or more components)
IN DISPERSION (**D**): mixture of binding and organic agents, namely polymers in aqueous dispersion, organic additives and mineral fillers (N.B.: ready-to-use mixtures)
Depending on their features, adhesives are thus classified:
Class **1**: normal setting adhesives
Class **2**: improved setting adhesives
There are three optional classes:
Class **F**: quick setting adhesives
Class **T**: slip resistant adhesives
Class **E**: adhesives with extended open time
There is a fourth additional class for cementitious adhesives only: adhesives can be classified as DEFORMABLE (S) and divided on the basis of test results under the UNI EN 12002 standard:
Class **S1**: deformable adhesives
Class **S2**: highly deformable adhesives

A.1a - Interior wall: Two coat plaster, gypsum**, drywall**, cement backer units

	Manufacturer*	Size of tile	Recommended Mortar	Back buttering required	Primer, if neccasary	ISO Classification	ANSI Material Standard	ANSI Installation Standard	Typical cure time for light traffic***
For situations in which a normal setting adhesive is recommended	LATICRETE®	All sizes	254 Platinum	Yes	None	C2TES1P1	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	24 hours
		All sizes	4-XLT	Yes	None	C2TES2	A118.4, A118.11	A108.5, A108.12, EJ 171	24 hours
		All sizes	LATAPOXY® 300 Adhesive	Yes	None	R2	A118.3	A108.6 EJ 171	24 hours
	Mapei	All sizes	Kerabond™ T / Keralastic™	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Kerabond/ Keralastic™ System	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultraflex LFT	Yes	None	C2TES1P1	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultralite™ S2 Mortar	Yes	None	C2ES2P2	A118.4, A118.11, ANSI A138.1-Green Squared Certified	A108.5, A108.12, EJ 171	18-24 hours
	TEC	All sizes	3n1 Performance Mortar	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	24 hours
		All sizes	Ultimate Large Tile Mortar	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	24 hours
For situations in which a fast setting adhesive is recommended	LATICRETE®	All sizes	254R Platinum Rapid	Yes	None	C2FTS2	A118.4, A118.11	A108.5, A108.12 EJ 171	3-4 hours
	Mapei	All sizes	Granirapid® System	Yes	None	C2FS2P2	A118.4, A118.11	A108.5, A108.12	3-4 hours
		All sizes	Ultraflex RS	Yes	None	C2FP1	A118.4, A118.11	A108.5, A108.12	3-4 hours
	TEC	All sizes	3n1 Performance Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	8 hours
		All sizes	Ultimate Large Tile Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	8 hours

(*) Manufacturer's recommendation is based on the manufacturer's recommendation at the time of printing. Please consult manufacturer's Technical Department or website for current recommendations. Always follow the manufacturer's current thin tile recommendations, the setting material installation instructions and tile industry standards.

(**) Interior use only.

(***) Based on 70° F and 50% RH. This recommendation is for light foot traffic only; not for heavy traffic, loads or exposure to elements. For the complete cure time, please consult manufacturer's technical department.

(****) Existing installations must be well bonded and cleaned, free of sealers and any contaminants that might inhibit bond.

A.1b - Interior wall: Existing ceramic tile, marble, stone****

	Manufacturer*	Size of tile	Recommended Mortar	Back buttering required	Primer, if neccasary	ISO Classification	ANSI Material Standard	ANSI Installation Standard	Typical cure time for light traffic***
For situations in which a normal setting adhesive is recommended	LATICRETE®	All sizes	254 Platinum	Yes	None	C2TES1P1	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	24 hours
		All sizes	4-XLT	Yes	None	C2TES2	A118.4, A118.11	A108.5, A108.12, EJ 171	24 hours
		All sizes	LATAPOXY® 300 Adhesive	Yes	None	R2	A118.3	A108.6 EJ 171	24 hours
	Mapei	All sizes	Kerabond™ T / Keralastic™	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Kerabond/ Keralastic™ System	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultraflex LFT	Yes	None	C2TES1P1	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultralite™ S2 Mortar	Yes	None	C2ES2P2	A118.4, A118.11, ANSI A138.1-Green Squared Certified	A108.5, A108.12, EJ 171	18-24 hours
	TEC	All Sizes	3n1 Performance Mortar	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	24 hours
		All Sizes	Ultimate Large Tile Mortar	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	24 hours
For situations in which a fast setting adhesive is recommended	LATICRETE®	All sizes	254R Platinum Rapid	Yes	None	C2FTS2	A118.4, A118.11	A108.5, A108.12 EJ 171	3-4 hours
	Mapei	All sizes	Granirapid® System	Yes	None	C2FS2P2	A118.4, A118.11	A108.5, A108.12	3-4 hours
		All sizes	Ultraflex RS	Yes	None	C2FP1	A118.4, A118.11	A108.5, A108.12	3-4 hours
	TEC	All sizes	3n1 Performance Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	8 hours
		All sizes	Ultimate Large Tile Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	8 hours

(*) Manufacturer's recommendation is based on the manufacturer's recommendation at the time of printing. Please consult manufacturer's Technical Department or website for current recommendations. Always follow the manufacturer's current thin tile recommendations, the setting material installation instructions and tile industry standards.

(**) Interior use only.

(***) Based on 70° F and 50% RH. This recommendation is for light foot traffic only; not for heavy traffic, loads or exposure to elements. For the complete cure time, please consult manufacturer's technical department.

(****) Existing installations must be well bonded and cleaned, free of sealers and any contaminants that might inhibit bond.

A.1c - Exterior wall: Two coat plaster, one coat plaster, cement backer units

	Manufacturer*	Size of tile	Recommended Mortar	Back buttering required	Primer, if neccasary	ISO Classification	ANSI Material Standard	ANSI Installation Standard	Typical cure time for light traffic***
For situations in which a normal setting adhesive is recommended	LATICRETE®	< 24"	254 Platinum	Yes	None	C2TES1P1	A118.4, A118.11 & A118.15	A108.5, A108.12, EJ 171	24 hours
		< 24"	4-XLT	Yes	None	C2TES2	A118.4, A118.11	A108.5, A108.12, EJ 171	24 hours
		< 24"	LATAPOXY® 300 Adhesive	Yes	None	R2	A118.3	A108.6 EJ 171	24 hours
	Mapei	All sizes	Kerabond™ T / Keralastic™	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Kerabond/ Keralastic™ System	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultraflex LFT	Yes	None	C2TES1P1	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultralite™ S2 Mortar	Yes	None	C2ES2P2	A118.4, A118.11, ANSI A138.1-Green Squared Certified	A108.5, A108.12, EJ 171	18-24 hours
	TEC	All Sizes	3n1 Performance Mortar	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	24 hours
		All Sizes	Ultimate Large Tile Mortar	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	24 hours
For situations in which a fast setting adhesive is recommended	LATICRETE®	All sizes	254R Platinum Rapid	Yes	None	C2FTS2	A118.4, A118.11	A108.5, A108.12 EJ 171	3-4 hours
	Mapei	All sizes	Granirapid® System	Yes	None	C2FS2P2	A118.4, A118.11	A108.5, A108.12	3-4 hours
		All sizes	Ultraflex RS	Yes	None	C2FP1	A118.4, A118.11	A108.5, A108.12	3-4 hours
	TEC	All sizes	3n1 Performance Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	8 hours
		All sizes	Ultimate Large Tile Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	8 hours

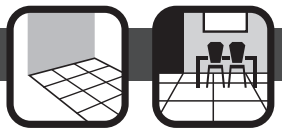
(*) Manufacturer's recommendation is based on the manufacturer's recommendation at the time of printing. Please consult manufacturer's Technical Department or website for current recommendations. Always follow the manufacturer's current thin tile recommendations, the setting material installation instructions and tile industry standards.

(**) Interior use only.

(***) Based on 70° F and 50% RH. This recommendation is for light foot traffic only; not for heavy traffic, loads or exposure to elements. For the complete cure time, please consult manufacturer's technical department.

(****) Existing installations must be well bonded and cleaned, free of sealers and any contaminants that might inhibit bond.

A.2a - Interior floors: Concrete, cement based morter beds, self leveling underlayment**



	Manufacturer*	Size of tile	Recommended Mortar	Back buttering required	Primer, if neccasary	ISO Classification	ANSI Material Standard	ANSI Installation Standard	Typical cure time for light traffic***
For situations in which a normal setting adhesive is recommended	LATICRETE®	All sizes	254 Platinum	Yes	None	C2TES2	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	72 hours
		All sizes	4-XLT	Yes	None	C2TES2	A118.4, A118.11	A108.5, A108.12, EJ 171	72 hours
		All sizes	LATAPOXY® 300 Adhesive	Yes	None	R2	A118.3	A108.6 EJ 171	24 hours
	Mapei	All sizes	Kerabond™ T / Keralastic™	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Kerabond/ Keralastic™ System	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultraflex LFT	Yes	None	C2TES1P1	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultralite™ S2 Mortar	Yes	None	C2ES2P2	A118.4, A118.11, ANSI A138.1-Green Squared Certified	A108.5, A108.12, EJ 171	18-24 hours
	TEC	All sizes	3n1 Performance Mortar	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	24 hours
		All sizes	Ultimate Large Tile Mortar	Yes	None	N/A	A118., A118.11	A108.5, A108.12, EJ 171	24 hours
For situations in which a fast setting adhesive is recommended	LATICRETE®	All sizes	254R Platinum Rapid	Yes	None	C2FTS2	A118.4, A118.11	A108.5, A108.12 EJ 171	24 hours
	Mapei	All sizes	Granirapid® System	Yes	None	C2FS2P2	A118.4, A118.11	A108.5, A108.12	3-4 hours
		All sizes	Ultraflex RS	Yes	None	C2FP1	A118.4, A118.11	A108.5, A108.12	3-4 hours
	TEC	All sizes	3n1 Performance Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	8 hours
		All sizes	Ultimate Large Tile Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	8 hours

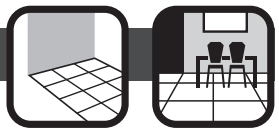
(*) Manufacturer's recommendation is based on the manufacturer's recommendation at the time of printing. Please consult manufacturer's Technical Department or website for current recommendations. Always follow the manufacturer's current thin tile recommendations, the setting material installation instructions and tile industry standards.

(**) Interior use only.

(***) Based on 70° F and 50% RH. This recommendation is for light foot traffic only; not for heavy traffic, loads or exposure to elements. For the complete cure time, please consult manufacturer's technical department.

(****) Existing installations must be well bonded and cleaned, free of sealers and any contaminants that might inhibit bond.

A.2b - Interior floors: Existing ceramic tile, marble, stone****



	Manufacturer*	Size of tile	Recommended Mortar	Back buttering required	Primer, if neccasary	ISO Classification	ANSI Material Standard	ANSI Installation Standard	Typical cure time for light traffic***
For situations in which a normal setting adhesive is recommended	LATICRETE®	All sizes	254 Platinum	Yes	None	C2TES2	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	72 hours
		All sizes	4-XLT	Yes	None	C2TES2	A118.4, A118.11	A108.5, A108.12, EJ 171	72 hours
		All sizes	LATAPOXY® 300 Adhesive	Yes	24 hours	R2	A118.3	A108.6 EJ 171	72 hours
	Mapei	All sizes	Kerabond™ T / Keralastic™	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Kerabond/ Keralastic™ System	Yes	None	C2ES2P2	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultraflex LFT	Yes	None	C2TES1P1	A118.4, A118.11	A108.5, A108.12, EJ 171	18-24 hours
		All sizes	Ultralite™ S2 Mortar	Yes	None	C2ES2P2	A118.4, A118.11, ANSI A138.1-Green Squared Certified	A108.5, A108.12, EJ 171	18-24 hours
	TEC	All Sizes	3n1 Performance Mortar	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	24 hours
		All Sizes	Ultimate Large Tile Mortar	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	24 hours
For situations in which a fast setting adhesive is recommended	LATICRETE®	All sizes	254R Platinum Rapid	Yes	None	C2FTS2	A118.4, A118.11	A108.5, A108.12 EJ 171	24 hours
	Mapei	All sizes	Granirapid® System	Yes	None	C2FS2P2	A118.4, A118.11	A108.5, A108.12	3-4 hours
		All sizes	Ultraflex RS	Yes	None	C2FP1	A118.4, A118.11	A108.5, A108.12	3-4 hours
	TEC	All sizes	3n1 Performance Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	8 hours
		All sizes	Ultimate Large Tile Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	8 hours

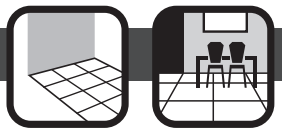
(*) Manufacturer's recommendation is based on the manufacturer's recommendation at the time of printing. Please consult manufacturer's Technical Department or website for current recommendations. Always follow the manufacturer's current thin tile recommendations, the setting material installation instructions and tile industry standards.

(**) Interior use only.

(***) Based on 70° F and 50% RH. This recommendation is for light foot traffic only; not for heavy traffic, loads or exposure to elements. For the complete cure time, please consult manufacturer's technical department.

(****) Existing installations must be well bonded and cleaned, free of sealers and any contaminants that might inhibit bond.

A.2c - Interior floors: Gypsum based mortar beds



	Manufacturer*	Size of tile	Recommended Mortar	Back buttering required	Primer, if neccasary	ISO Classification	ANSI Material Standard	ANSI Installation Standard	Typical cure time for light traffic***
For situations in which a normal setting adhesive is recommended	LATICRETE®	All sizes	254 Platinum	Yes	If primer/sealer is not present; skim the gypsum mortar bed with a minimum of 1/16" 254 Platinum. For wet areas use Hydro Ban for other areas use a crack isolation membrane like HydroBan or Blue 92.	C2TES2	A118.4, A118.11 & A118.15	A108.5, A108.12, EJ 171	72 hours
		All sizes	4-XLT	Yes	If primer/sealer is not present; skim the gypsum mortar bed with a minimum of 1/16" 254 Platinum. For wet areas use Hydro Ban for other areas use a crack isolation membrane like HydroBan or Blue 92.	C2TES2	A118.4, A118.11	A108.5, A108.12, EJ 171	72 hours
		All sizes	LATAPOXY® 300 Adhesive	Yes	If primer/sealer is not present; skim the gypsum mortar bed with a minimum of 1/16" 254 Platinum. For wet areas use Hydro Ban for other areas use a crack isolation membrane like HydroBan or Blue 92.	R2	A118.3	A108.6 EJ 171	24 hours
	TEC	All Sizes	3n1 Performance Mortar	Yes	Prime with TEC Multipurpose Primer, apply HydraFlex for crack isolation membrane	N/A	A118.4, A118.11 & A118.15	A108.5, A108.12, EJ 171	36 hours
		All Sizes	Ultimate Large Tile Mortar	Yes	Prime with TEC Multipurpose Primer, apply HydraFlex for crack isolation membrane	N/A	A118.4 & A118.11	A108.5, A108.12, EJ 171	36 hours
For situations in which a fast setting adhesive is recommended	LATICRETE®	All sizes	254R Platinum Rapid	Yes	If primer/sealer is not present; skim the gypsum mortar bed with a minimum of 1/16" 254 Platinum. For wet areas use Hydro Ban for other areas use a crack isolation membrane like HydroBan or Blue 92.	C2FTS2	A118.4 & A118.11	A108.5, A108.12 EJ 171	24 hours
	TEC	All sizes	3n1 Performance Mortar (Fast Setting)	Yes	Prime with TEC Multipurpose Primer, apply HydraFlex crack isolation membrane	N/A	A118.4, A118.11 & A118.15	A108.5, A108.12, EJ 171	8 hours
		All sizes	Ultimate Large Tile Mortar (Fast Setting)	Yes	Prime with TEC Multipurpose Primer, apply HydraFlex crack isolation membrane	N/A	A118.4 & A118.11	A108.5, A108.12, EJ 171	8 hours

(*) Manufacturer's recommendation is based on the manufacturer's recommendation at the time of printing. Please consult manufacturer's Technical Department or website for current recommendations. Always follow the manufacturer's current thin tile recommendations, the setting material installation instructions and tile industry standards.

(**) Interior use only.

(***) Based on 70° F and 50% RH. This recommendation is for light foot traffic only; not for heavy traffic, loads or exposure to elements. For the complete cure time, please consult manufacturer's technical department.

(****) Existing installations must be well bonded and cleaned, free of sealers and any contaminants that might inhibit bond.

A.2d - Exterior floors: Concrete and cement based mortar beds

	Manufacturer*	Size of tile	Recommended Mortar	Back buttering required	Primer, if neccasary	ISO Classification	ANSI Material Standard	ANSI Installation Standard	Typical cure time for light traffic***
For situations in which a normal setting adhesive is recommended	LATICRETE®	All sizes	254 Platinum	Yes	None	C2TES2	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	72 hours
		All sizes	4-XLT	Yes	None	C2TES2	A118.4, A118.11	A108.5, A108.12, EJ 171	72 hours
		All sizes	LATAPOXY® 300 Adhesive	Yes	None	R2	A118.3	A108.6 EJ 171	24 hours
	TEC	All Sizes	3n1 Performance Mortar	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	72 hours
		All Sizes	Ultimate Large Tile Mortar	Yes	None	N/A	A118.4 , A118.11	A108.5, A108.12, EJ 171	72 hours
For situations in which a fast setting adhesive is recommended	LATICRETE®	All sizes	254R Platinum Rapid	Yes	None	C2FTS2	A118.4, A118.11	A108.5, A108.12 EJ 171	24 hours
	TEC	All sizes	3n1 Performance Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11, A118.15	A108.5, A108.12, EJ 171	24 hours
		All sizes	Ultimate Large Tile Mortar (Fast Setting)	Yes	None	N/A	A118.4, A118.11	A108.5, A108.12, EJ 171	24 hours

(*) Manufacturer's recommendation is based on the manufacturer's recommendation at the time of printing. Please consult manufacturer's Technical Department or website for current recommendations. Always follow the manufacturer's current thin tile recommendations, the setting material installation instructions and tile industry standards.

(**) Interior use only.

(***) Based on 70° F and 50% RH. This recommendation is for light foot traffic only; not for heavy traffic, loads or exposure to elements. For the complete cure time, please consult manufacturer's technical department.

(****) Existing installations must be well bonded and cleaned, free of sealers and any contaminants that might inhibit bond.

Notes

IMPORTANT

The information and directions provided in this manual are to be considered valid until an update is published. The updated document replaces all previous publications. You can check for updates on the company website at floridatile.com/THINNER or contact the company's technical support office. The company reserves the right to modify the contents and appearance of this manual, should this be deemed necessary. As far as ancillary materials (adhesives, mats, etc.) are concerned, the indications provided are those of the relative manufacturers that guarantee the technical characteristics of their products on the market.

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