

XLINING

Warranty.
Installation and Maintenance Technical Manual

APE Grupo – Warranty and XLINING Installation and Maintenance Technical Manual

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1. Presentation of the group and purpose of the manual

Ape Grupo is a leader in the creation of differentiated spaces by offering a wide range of design ceramics, products and services.

and services that help our customers reach their full potential.

Thanks to the effort and work carried out in each of our brands, the result of an expansive strategy and the great diversity of our products, we are present in 120 countries, where our nearly 200 collections are distributed.

We group our product offer under four brands, Ape best for you; Carmen True Tiles; XLINING and Ilbagno that offer global solutions for the habitat, this manual contains all the necessary information for the installation.

and maintenance of each of our solutions, framed in each of its brands.

The purpose of this manual is to provide detailed instructions and techniques for the correct handling, installation and maintenance of all the company's products, thus ensuring an efficient and durable application of the material.

2. XLINING Presentation

2.1.1 Introduction to XLINING

XLINING is the ape group brand dedicated to large format ceramics. An advanced state-of-the-art material that we work with thanks to the most innovative digital manufacturing technologies. XLINING is oriented to solve projects from a broad vision, where architecture and interior design play an essential role.

XLINING is an advanced material, a porcelain sheet of large size and low thickness that combines unsurpassed mechanical resistance and resistance to external agents with spectacular aesthetics. Manufactured with the latest lamination pressing technologies, XLINING is an ultra-compact material resulting from a sintering process of natural elements. This technique ensures the absence of microdefects

and almost zero porosity, giving the material unsurpassed strength and durability. This process also allows for a reduction in thickness, creating a lightweight material that reduces the consumption of raw materials and energy during manufacture and transportation.

With this product, ape grupo adds new innovative ceramic solutions that respond to the demands and requirements of our customers. We understand that each project is unique and requires a customized result that combines aesthetics and functionality.

XLINING is the new step of the perfect mix, a commitment to offer the solution to any spatial and architectural challenge.

2.1.2 Formats and thicknesses

XLINING ceramic sheets are available in a variety of formats to suit various design and functional needs. Thicknesses vary to offer options ranging from lightweight applications to more intensive uses.

We group according to the thickness in 3 groups:

Thickness of 6 mm

Thickness of 12 mm

Thickness of 20 mm

And depending on each collection we can find different formats, which we group in two ranges of piece height in the following measures:

120x278x0.6/ 120x280x0.6

160x320x1,2 / 163x323x1,2 / 163x324x1,2

160x320x2 / 163x323x2 / 163x324x2

2.1.3 Usos

XLINING ceramic plates are highly versatile and can be used in a wide range of applications:

- Wall coverings: ideal for bathrooms, kitchens and facades.
- Countertops: provide resistant and aesthetic surfaces in kitchens and bathrooms.
- Stairs: they offer a durable and safe solution.
- Furniture and other decorative elements.

2.1.4 Tones and directionality

Ape grupo's XLINING slabs are made with porcelain tiles through a specialized industrial process, which gives them high quality and color consistency. Although they do not have the natural aesthetic variations of stone, the rigorous selection of raw materials allows for a remarkable chromatic uniformity.

Production and selection process

XLINING's production process includes a thorough selection phase to group batches with similar shades. This ensures that each product meets the company's quality standards.

Installation suggestions

- Flooring: place the floors in each room with a single tone, breaking the uniformity only in the door frames that connect to other rooms.
- Walls. Interiors and exteriors: shades other than those of the floor can be used, assigning one shade per wall.
- Walls. Large exterior surfaces: it is possible to coat a large exterior wall with various shades, taking advantage of architectural elements or discontinuities to minimize the difference between the shades.

Assistance in large-scale projects

For large-scale projects, XLINING's design and technical support department is available to collaborate in the distribution of shades, working together with the designer or buyer.

Mounting considerations

- Color uniformity is obtained by applying the plates in the same direction (horizontal or vertical).
- In non-standard formats, it is crucial that they are mounted in the same orientation as the main plates.
- Mounting plates in different directions on the same wall can cause a perception of color variation when exposed to light, even if they are the same shade.

In summary, ape grupo's XLINING sheets offer a high quality technical and aesthetic solution, with rigorous control over color consistency and flexibility in their application for various architectural projects.

2.1.5 Properties of technical porcelain slabs

Porcelain tile sheets such as XLINING's offer a number of exceptional properties that make them ideal for a variety of indoor and outdoor applications.

in exteriors. The main characteristics and benefits of this material are detailed below:

Lightness

Description: porcelain slabs in their thinnest versions are remarkably light.

Benefit: they facilitate handling and installation, reducing the physical effort and time required for installation.

Hygienic surface

Description: Ceramic surfaces are extremely hygienic.

Benefit: ideal for environments that require high standards of cleanliness, such as kitchens and bathrooms, as they do not harbor bacteria and microorganisms.

Scratch resistance

Description: technical porcelain tiles resist scratches and abrasions.

Benefit: they maintain their original appearance and properties even after heavy use, making them durable and low-maintenance.

Waterproof

Description: Prolonged exposure to humidity does not affect these plates.

Benefit: they are perfect for wet areas such as bathrooms and kitchens, as they do not deform or deteriorate with water.

Chemical resistance

Description: resistant to organic, inorganic, chemical and

disinfectant solvents.

Benefit: can be cleaned with strong chemicals without risk of damage, except hydrofluoric acid.

Fire resistance

Description: resistant to high temperatures and direct contact with very hot objects.

Benefit: they do not alter with heat, making them safe and suitable for areas such as kitchens and around fireplaces.

Impact resistance

Description: they offer high impact resistance once installed.

Benefit: they ensure durability and a long service life, being resistant to shocks and falls of heavy objects.

Stain resistance

Description: they are not altered by prolonged contact with common kitchen substances.

Benefit: they are easy to clean and maintain, keeping their impeccable appearance.

Environmentally friendly

Description: they do not emit harmful elements and are recyclable.

Benefit: they contribute to a more sustainable environment, being reusable in other production processes.

Dimensional stability

Description: they have a low coefficient of thermal expansion, which avoids significant dimensional variations.

Benefit: they ensure a stable and durable installation without deformation over time.

Suitable for outdoor and indoor use

Description: resistant to atmospheric agents such as high temperatures and frost.

Benefit: versatile and durable, suitable for both indoor and outdoor applications without damage.

Resistance to UV rays

Description: they do not alter when exposed to UV rays.

Benefit: they maintain their original appearance over time, even outdoors in direct sunlight.

Bending strength

Description: they have a high breaking load.

Benefit: they offer a stable and durable surface, suitable for applications requiring high structural strength.

These properties make technical porcelain tiles an excellent choice for high quality cladding in a variety of environments, offering long-term durability, safety, and aesthetics.

2.2 Transportation

2.2.1 Packaging (boxes and metallic easel)

XLINING offers two different types of packaging depending on the size and thickness of the porcelain tile:

Stackable wooden drawers:

- Plate dimensions: for plates of various thicknesses.
- Description: used for the safe transport and storage of the finest porcelain slabs. The drawers are designed to be stackable up to a maximum of 9 high, facilitating efficient storage.
- Storage data:
 - Plate surface area: 3.36 m² Plate weight: 54.5 kg
 - Weight per square meter: 16.22 kg/m²
 - Plates per box: 20
 - Weight of complete drawer: 1,090 kg
 - Dimensions of drawer: 145 x 292 x 35 cm

Metal trestles:

- Plate dimensions: for plates of 160x320 meters and 12 mm thick.
- Description: used for larger and thicker plates, the metal trestles provide a sturdy and safe support during transport.
- Storage data:
 - Plate surface: 5.12 m²
 - Plate weight: 149 kg
 - Weight per square meter: 29.10 kg/m²
 - Sheets per ridge: 22
 - Weight of complete stand: 3.458 kg
 - Dimensions of stand: 75 x 330 x 201 cm

Storage and transportation considerations:

- Plate distribution: smaller plates should never be placed between larger plates. This avoids possible damage during transport and storage.
- Adequate support: the trestles must be able to support the entire surface of the plates. Make sure that the plates are fully supported.
- Use of straps: the straps used to secure the sheets should not be excessively tightened.
- Excessive pressure can break parts, compromising the integrity of the product.
- When installing the straps, cardboard or plastic corner pieces should be placed on the sharp edges to prevent breakage of the straps, which could cause the sheets to fall.

This information ensures that XLINING porcelain slabs are transported and stored safely, minimizing the risk of damage and facilitating efficient handling of the product.

2.2.2. Arrangement of large-format porcelain tile slabs on the truck

Transportation of large format porcelain tile slabs requires careful planning to ensure the integrity of the material during transport. The following are the best practices for arranging the slabs on the truck:

Truck preparation

- Vehicle inspection:
 - Verify that the truck is in good condition and clean.
 - Make sure that the floor of the truck is flat and free of elements that could cause damage.
- Weight distribution:
 - Distribute the weight evenly to avoid imbalances that may cause problems during transport.

Plate loading

- Stackable wooden drawers:
 - Horizontal position: place the wooden crates in a vertical position, ensuring that they are well aligned and supported.
 - Spacing: leave a small space between the drawers to avoid friction during movement.
 - Fastening: use straps and straps to securely fasten the crates to the truck, preventing movement during transit.
- Metal trestles:
 - Position and fastening: the metal trestles must be positioned so that the plates are well supported. Make sure that the trestles are firmly fixed to the floor of the truck.
 - Additional protection: place protective materials such as foam or blankets between the trestles and the truck walls to prevent lateral movement and damage.
 - Fastening: use straps and straps to securely fasten the crates to the truck, preventing movement during transit.

Specific considerations

- Different sized plates:
 - Spacing: Never place small plates between large plates. This could cause damage due to uneven pressure.
 - Loading sequence: load the larger plates first and, if necessary, place the smaller plates last, always ensuring that they are adequately supported.

- Use of spacers:
Friction prevention: use spacers between sheets to avoid friction and possible scratches during transport.
- Load securing:
Strapping and straps: secure each row of drawers or trestles with straps and straps that are tight, but not excessively tight.
Anchor points: use the truck's anchor points to secure the straps and ensure that the load does not move.
- Edge and corner protection:
Additional protections: place corner and edge protectors on the sheets to prevent damage during transport.
Checks: carry out periodic checks during the trip to ensure that the cargo remains stable and undamaged.

Unloading at destination

- Preparation of the unloading area:
Make sure the unloading area is ready and free of obstacles.
Have the necessary equipment on hand to handle the plates, such as cranes or forklifts.
- Careful unloading:
Unload the plates carefully, following the reverse order of loading.
Inspect each plate as it is unloaded for damage and take immediate action if necessary.
- Safe handling:
Uses appropriate equipment and follows safety rules to handle the plates, avoiding accidents and damages.

These practices ensure safe and efficient transportation of large format porcelain tile slabs, minimizing the risk of damage and guaranteeing that the material arrives at its destination in perfect condition.

2.2.3. Loading and unloading and type of shovels necessary for handling large format porcelain tile slabs

Handling large format porcelain tiles requires specialized equipment and careful procedures to ensure their integrity during loading and unloading.

The following are the steps and tools needed to perform these tasks efficiently and safely.

Porcelain tile slab loading

- Preparation of the area:
Make sure the loading area is level, free of obstacles

and adequate for maneuvering the necessary equipment.

- Required equipment:
Cranes or hoists: to lift large format plates safely.
Specialized shovels for large format plates: shovels with suction systems or adjustable hooks.
- Loading procedure:
Pre-inspection: inspect plates for damage prior to loading.
Use of cranes/hoists: place the suction cups of the crane on the plates, making sure that they are well fixed.
Controlled lifting: lift the plates slowly, making sure they are balanced and stable.
Placement on the truck: move the plates carefully to the truck and place them on the prepared crates or trestles.

Porcelain tile slab unloading

- Preparation of the unloading area:
Make sure the area is clear and level.
Have the unloading equipment ready and in good working order.
- Required equipment:
Cranes or hoists: similar to those used for loading.
Forklift trucks with special attachments: equipped with extensions and suction systems or hooks for handling large plates (minimum blade length 1.35 m).
- Unloading procedure:
Initial inspection: check the condition of the plates when the truck is opened.
Straps and straps removal: carefully remove the straps and straps that secure the plates.
Use of cranes/hoists: place the suction cups on the plates, making sure that they are well adhered.
Controlled descent: lower the plates slowly and place them in the designated unloading area.

Type of blades required

- Suction paddles (suction systems):
Description: these paddles use suction cups to adhere to the porcelain slabs, allowing safe handling without risk of damage.
Applications: ideal for large format plates and smooth surfaces.

Advantages: they provide a firm grip without the need to drill or damage the surface of the plate.

- Paddles with adjustable hooks:

Description: paddles equipped with hooks that are adjusted to firmly hold the plates.

Applications: suitable for plates that require more flexible handling or have specific characteristics.

Advantages: they allow adjustment according to the size and thickness of the plate, offering greater versatility.

- Forklifts with extensions:

Description: Forklift trucks equipped with extendable arms and special adapters for large format plates (minimum length of blades 1,35m).

Applications: used for the transport and placement of plates inside warehouses or construction sites.

Advantages: facilitate the movement of heavy and bulky plates, increasing efficiency and safety.

Safety and best practices

- Personal protective equipment (PPE): always wear gloves, helmet, safety glasses and appropriate footwear when handling plates.
- Staff training: ensure that staff is trained in the use of specialized equipment and large format plate handling techniques.
- Regular inspection of equipment: regularly check the condition of cranes, shovels and forklifts to ensure they are in good working order and avoid accidents.

These practices and equipment ensure safe and efficient handling of large format porcelain slabs, minimizing the risk of damage and optimizing the loading and unloading process.

2.2.4. Manual handling of large-format porcelain slabs

Manual handling of large format porcelain tile requires special precautions to avoid damage to the material and injury to personnel. The following are best practices and considerations for safe and effective manual handling of these slabs.

Preparation and safety

- Personal protective equipment (PPE):

cut-resistant gloves Safety

helmet

Safety glasses

Safety footwear with reinforced toe cap Lumbar support belt (optional, for additional support)

- Preparation of the work area:

Make sure the area is clear and clean.

Keep the space well lit.

Have all the necessary equipment and tools at hand.

Handling techniques

- Preliminary inspection:

Check the plates for any previous damage before starting to handle them.

Make sure there are no sharp edges or splinters that could cause cutting.

- Use of manual suction cups:

It uses manual suction cups specially designed to handle smooth surfaces such as porcelain tile.

Place the suction cups in strategic positions to distribute the weight evenly.

- Number of people required:

For large format plates, it is recommended that at least two people participate in the handling.

In case of very large and heavy plates, consider using three or more people for safety.

- Survey procedure:

Starting position: each person should be positioned on opposite sides of the plate, with the suction cups in place.

Coordinated lifting: coordinate lifting at the same time, using your legs to lift and not your back.

Transport: walk in a synchronized manner, keeping the plank in a stable position and at a comfortable height.

Placement: place the plate gently on its destination, making sure not to release it until it is fully supported and stable.

Specific considerations

- Handling in confined spaces:

Plan the route in advance to avoid obstacles and make sure there is enough room to maneuver the plancha.

If it is necessary to rotate the plate, coordinate well the movement between all the manipulators.

- Use of auxiliary tools:

Transport rollers: use rollers to move the plates over short distances and flat surfaces.

Temporary supports: place temporary supports along the course to rest the plate if necessary.

- Rest and staff turnover:

To avoid fatigue and risk of injury, take regular breaks.

Rotate personnel if many plates need to be handled or if working conditions are particularly difficult.

- **Communication:**

Maintain constant and clear communication between all team members during handling.

Uses preset signals or commands to coordinate movements and raise or lower the plate.

Temporary storage

- **Support surface:**

Place the plates on flat and stable surfaces, preferably cushioned to avoid damage.

Avoid stacking more than two plates without adequate support between them.

- **Protection:**

Cover plates with blankets or protective materials if they are to be stored for an extended period of time.

Make sure the plates are in a dry area and protected from extreme weather conditions.

Summary

Manual handling of large format porcelain tile can be safe and efficient if proper practices are followed and the correct tools are used. Always prioritize the safety of personnel and the integrity of the material, making sure that everyone involved is trained and equipped to perform the task safely.

2.3 Installation

2.3.1 Cutting and drilling of large format porcelain tile slabs. Types of cutting and tools

Cutting and drilling large format porcelain tile requires specialized tools and proper techniques to ensure a perfect finish and avoid damage to the material. The following is a description of the types of cutting, tools required and recommended procedures.

Cutting types

- Straight cut
- Angle cut
- Curved cut
- Perforated

Necessary tools

- Manual cutter for large format plates

- Electric diamond blade cutter
- Water saw for porcelain tile
- Hammerless drill with diamond drill bits
- Cutting table with cushioned surface
- Measuring ruler and tile marker
- Tile tile nippers and pliers
- Sanding machine or diamond finishing stone
- Personal protective equipment (gloves, goggles, face mask)

Cutting procedures

- **Preparation of the work area:**

Make sure the area is clean, well lit and with enough space to maneuver the plates.

Place the cutting table on a stable surface and make sure you have access to a water source if using wet tools.

- **Straight cut:**

Manual cutter: ideal for straight and precise cuts in thinner sheets.

- Place the plate on the cutting table and mark the cutting line with a marker.
- Use the manual cutter to make the cut, applying constant pressure.

Electric cutter: recommended for cutting thicker sheets.

- Mount a diamond blade on the electric cutter.
- Adjust the plate on the cutting table and follow the line marked with the cutter, maintaining a constant flow of water to reduce dust and cool the disc.

- **Angle cut:**

Use an electric cutter with adjustable guide for precise cuts at specific angles.

Be sure to secure the plate firmly on the cutting table before proceeding.

- **Curved cut:**

Water grinder: use a water grinder with a diamond blade suitable for curved cuts.

- Mark the contour of the cut on the plate.
- Follow the contour slowly with the grinder, adjusting the water flow as necessary to keep the blade cool and reduce dust.

Drilling procedures

- Preparation:
 - Precisely mark the point where the drilling is to be performed.
 - Fix the iron on a stable and flat surface.
- Drilling with hammerless drill:
 - Diamond drill bits: use specific diamond drill bits for porcelain tile.
 - Set the hammerless drill to low speed to start hammerless drilling.
 - Apply water continuously to cool the drill bit and minimize dust.
 - Drill slowly without a firing pin, applying even pressure and making sure the drill bit is perpendicular to the surface of the plate.
 - For drilling holes for junction boxes (switches, sockets, etc...) start the process with a hammerless drilling in each angle with a 6mm drill and then cut with an electric cutter.
 - Hammerless Diamond Drill Cup: for larger diameter drilling.
 - Mark the outline of the hole and start drilling from the edge, moving towards the center.
 - Maintain a constant flow of water to cool the tool.
- Finishing of the cut and perforation:
 - Use a sander or diamond stone to smooth cut or drilled edges.
 - Verify the accuracy of cuts and drill holes and make adjustments if necessary.

Tips and precautions

- Safety: always wear personal protective equipment to avoid injury from porcelain shards or exposure to dust.
- Tool maintenance: keep tools in good condition, changing blades and bits when they wear out.
- Pre-testing: performs test cuts and drill holes on scrap parts to adjust tools and techniques before working on the main plates.
- Hydration: use adequate water to cool tools and reduce dust, especially when using power cutters and drills.

These techniques and tools allow precise cutting and drilling of large format porcelain tiles, guaranteeing a professional finish and minimizing the risk of damage to the material.

2.3.2 Placement as cladding

2.3.2.1 Interior cladding

The installation of large format porcelain tile as an interior covering requires meticulous preparation and proper techniques to ensure a long-lasting and aesthetically pleasing result. Detailed steps for this installation are described below.

Materials and tools required

- Large format porcelain tile sheets.
- High adhesion adhesive specific for porcelain tile.
- Large format tile cutter.
- Laser level.
- Spacers and leveling wedges.
- Notched trowel (preferably 10 mm).
- Vibrating machine for ceramics, the use of a rubber hammer is not recommended.
- Drill with beater for adhesive mixing.
- Leveling paste (if necessary).
- Grout for porcelain tile.
- Sponge, bucket of water and cleaning cloths.
- Personal protective equipment (gloves, goggles, mask).
- Sandpaper or electric sander (for smoothing edges).
- Masking tape.

Surface preparation:

- Inspection and cleaning:
 - The surface must be completely clean. Remove dust, grease and any contaminants. Use a broom, vacuum and damp cloths to ensure thorough cleaning.
- Leveling:
 - Verify levelness: use the laser level to verify the flatness of the surface. Mark irregular areas.
 - Correction of imperfections: apply leveling paste to marked areas. Allow to dry according to manufacturer's instructions and sand raised areas if necessary.
- Primer:
 - Application: Apply a suitable primer with a roller or brush to improve adhesion of the adhesive. Allow to dry for the recommended time.

Installation of the plates

- Design planning:
 - Measuring and marking: use the laser level to mark guide lines on the wall, ensuring symmetry and the

desired design.

Calculation of cuts: consider the necessary cuts for corners, sockets and other interruptions.

Plan to minimize waste.

- Plate cutting:

Accurate measurement: measure twice before cutting. Mark the cutting lines with a pencil.

Cutting: use a large format tile cutter to make precise cuts. Sand the cut edges to avoid sharp edges.

- Adhesive application:

Mixing: prepare the adhesive according to the manufacturer's instructions using the drill with whisk.

Application: apply the adhesive on the wall and on the back of the sheet (double gluing) with a notched trowel. Ensure complete and uniform coverage.

- Placement of the plates:

Positioning: place the plate on the adhesive by pressing it firmly from the center to the edges.

Leveling: use the vibratory machine to adjust the plate and eliminate air pockets. Place spacers and leveling wedges to maintain proper alignment and level.

Continuous alignment: continuously checks with laser level and adjusts as needed with self- leveling systems.

Finishing

- Drying of the adhesive:

Drying time: let the adhesive dry for the time recommended by the manufacturer, generally between 24 and 48 hours.

- Grout application:

Preparation: Mix the grout according to the manufacturer's instructions.

Joint filling: apply the grout with a rubber trowel, making sure to completely fill the joints.

Initial cleanup: use a damp sponge to wipe off excess grout before it hardens.

- Final cleaning:

Initial drying: allow the grout to set but not harden completely.

Detailed cleaning: clean the surface with a clean sponge and water, changing the water frequently. Use a dry cloth to polish and remove any grout residue.

- Tips and best practices

Protective equipment: always wear gloves, goggles and a mask during cutting and handling of plates to avoid injury.

Assistant: consider having an assistant to handle large format plates, as they are heavy and difficult to handle alone.

Environmental conditions: work in a temperature and humidity controlled environment to ensure proper adhesion of the adhesive and grout.

Cautions: use masking tape to protect adjacent areas and ensure clean lines at the edges.

Summary

By following these detailed steps, you can achieve a professional and durable installation of large format porcelain tile as an interior covering. Be sure to perform each step with precision and care for the best results.

2.3.2.2. Exterior cladding

The laying of large format porcelain tile as an exterior cladding is an increasingly popular technique due to the aesthetic and functional advantages offered by this material. Below, I provide you with a step-by-step guide on how to perform this task correctly:

Materials and tools required

- Large format porcelain tile sheets.
- High quality cementitious adhesive.
- Laser or bubble level.
- Serrated spatula.
- Tile cutter (ideally electric).
- Leveling brackets and spacers.
- Vibrating machine for ceramics, the use of rubber hammer is not recommended.
- Work gloves.
- Sponge and bucket of water.
- Waterproofing sealer (optional).

Surface preparation

- Cleanliness:

Step 1: remove all dirt, dust, grease and any other contaminants from the surface with a broom, vacuum cleaner and, if necessary, specific detergents for construction.

Step 2: wash the surface with water if there are detergent residues, and allow to dry completely.

- Leveling:

Step 1: Check the flatness of the surface using a long level. Surfaces should be completely smooth.

Step 2: Fill voids or depressions with a suitable leveling mortar. If the surface is very uneven, consider applying a layer of self-leveling mortar.

Planning and measurement

- Measurement

Step 1: Measure the total area to be coated to calculate the amount of material needed.

Step 2: Determine the starting point and mark a horizontal base line using a laser or spirit level. This line must be perfectly level.

- Marking:

Step 1: Mark additional vertical and horizontal lines according to the size of the planks to facilitate alignment during installation.

Step 2: if necessary, make a preliminary design on the floor, placing the planks in the pattern. desired to adjust cuts and avoid errors during installation.

Adhesive application

- Adhesive preparation:

Step 1: Mix the cementitious adhesive according to the manufacturer's instructions, making sure to obtain a homogeneous consistency.

Step 2: let the mixture stand for the indicated time (usually about 5 minutes) and then stir again.

- Application:

Step 1: use a notched trowel (10-12 mm notched is recommended for large format) to spread an even layer of adhesive on the wall.

Step 2: apply a thin layer of adhesive to the back of the plate to ensure full contact (double gluing technique).

Placement of the plates

- Installation:

Step 1: Place the first sheet aligned with the guide lines. Press firmly from the center to the edges to avoid air bubbles.

Step 2: use the vibrating machine on the plate to ensure proper adhesion and leveling.

- Spacers:

Step 1: Insert leveling crossheads and spacers between the planks to maintain even spacing.

Step 2: Check for constant levelness with a level, adjusting as necessary using the self-leveling system.

Adjustments and cuts

- Cuts:

Step 1: Measure and mark the sheets that need to be cut to fit edges, corners or other special areas.

Step 2: Use an electric tile cutter to make precise cuts.

Water-powered cutters are recommended to avoid dust and get cleaner cuts.

- Final adjustment:

Step 1: place the cut sheets in their corresponding places, making sure they fit perfectly.

Step 2: double-check the levelness and alignment of all plates before the adhesive dries completely.

Finishes

- Cleanliness:

Step 1: Clean any excess adhesive from the plate surfaces with a damp sponge before drying.

Step 2: Check the joints and make sure they are clean and ready for sealant.

- Sealing of joints:

Step 1: Once the adhesive has cured according to the manufacturer's instructions (typically 24-48 hours), apply a suitable joint sealant.

Step 2: Use a rubber spatula to spread the sealant evenly into the joints. Wipe off excess with a damp sponge.

- Additional tips:

Climatic conditions: avoid installation in extreme climatic conditions (very high or very low temperatures, and during rain) to ensure proper curing of the adhesive.

Safety: wear personal protective equipment, such as gloves, safety glasses and mask, to prevent accidents and exposure to dust and chemicals.

Maintenance

- Regular cleaning:

Step 1: clean the plates regularly with water and neutral soap to maintain their appearance.

Step 2: Avoid using abrasive cleaners that may damage the surface of the porcelain tile.

Revision of seals

Step 1: Periodically inspect the condition of the joint sealant and reapply if necessary to maintain waterproofing and aesthetics.

By following these detailed steps, you will be able to install large format porcelain tiles effectively and safely, ensuring a professional and long-lasting finish to your exterior cladding.

2.3.3.1 Interior flooring

The installation of large format porcelain tile as interior flooring requires meticulous preparation and attention to detail to ensure a long-lasting and aesthetically pleasing result.

A complete step-by-step guide to this process is provided below.

Materials and tools required

- Large format porcelain tile sheets
- High-quality cementitious adhesive for porcelain tiles
- Laser or bubble level
- Serrated spatula (preferably 10-12 mm)
- Electric tile cutter (ideally with water)
- Leveling crosses and spacers
- Vibrating machine for ceramics, the use of rubber hammer is not recommended.
- Adhesive mixer
- Bucket and water
- Work gloves
- Knee pads
- Trowel and trowel
- Circular saw with diamond blade (for complex cuts).
- Waterproofing sealant (optional)

Surface preparation

- Cleanliness:
Step 1: remove any debris, dust, grease and other contaminants from the floor with an industrial vacuum cleaner and, if necessary, with specific construction detergents.
Step 2: wash the floor with water to remove detergent residues and allow to dry completely.
- Leveling:
Step 1: Use a long level to check the flatness of the floor. The surface should be completely level.
Step 2: If there are irregularities, correct with a self-leveling mortar. Follow the manufacturer's instructions for applying and allowing the mortar to cure.

Planning and measurement

- Measurement:
Step 1: Measure the total area to be paved to calculate the amount of material needed.
Step 2: Determine the starting point and mark a horizontal base line using a laser or bubble level. Make sure this line is perfectly level.
- Marking:
Step 1: Mark additional lines (grids) on the floor

following the size of the planks to facilitate alignment during installation.

Step 2: make a preliminary design on the floor, placing the planks in the desired pattern to adjust cuts and avoid mistakes during installation.

Adhesive preparation

- Adhesive mixing:
Step 1: Mix the cementitious adhesive according to the manufacturer's instructions, making sure to obtain a homogeneous consistency without lumps.
Step 2: let the mixture stand for the indicated time (usually about 5 minutes) and then stir again.

Adhesive application

- Extension of the adhesive:
Step 1: apply the adhesive to the floor with a notched trowel (10-12 mm notched) ensuring even distribution.
Step 2: also apply a thin layer of adhesive to the back of the plate (double gluing technique) to improve adhesion.

Placement of the plates

- Initial installation:
Step 1: Place the first sheet aligned with the guide lines. Press firmly from the center to the edges to avoid air bubbles.
Step 2: use the vibrating machine on the plate to ensure proper adhesion and leveling.
- Use of spacers:
Step 1: Insert leveling crossheads and spacers between the planks to maintain even spacing.
Step 2: check for constant levelness with a level, adjusting as necessary using the self-leveling system.

Adjustments and cuts

- Cutting:
Step 1: Measure and mark the sheets that need to be cut to fit edges, corners or other special areas.
Step 2: Use an electric tile cutter with water to make precise, clean cuts.
- Final adjustment:
Step 1: place the cut sheets in their corresponding places, making sure they fit perfectly.
Step 2: double-check the levelness and alignment of all plates before the adhesive dries completely.

Finishes

- Adhesive cleaning:
 - Step 1: Clean any excess adhesive from the plate surfaces with a damp sponge before drying.
 - Step 2: Check the joints and make sure they are clean and ready for sealant.
- Sealing of joints:
 - Step 1: Once the adhesive has cured according to the manufacturer's instructions (typically 24-48 hours), apply a suitable joint sealant.
 - Step 2: Use a rubber spatula to spread the sealant evenly into the joints. Wipe off excess with a damp sponge.

Additional tips

- Climatic conditions: avoid installation in extreme climatic conditions (very high or very low temperatures) to ensure proper curing of the adhesive.
- Safety: wear personal protective equipment, such as gloves, safety glasses and mask, to prevent accidents and exposure to dust and chemicals.
- Traffic conditions: wait the appropriate time (according to the adhesive manufacturer) before allowing foot traffic on the new pavement.

Maintenance

- Regular cleaning:
 - Step 1: clean the plates regularly with water and neutral soap to maintain their appearance.
 - Step 2: Avoid using abrasive cleaners that may damage the surface of the porcelain tile.
- Revision of seals:
 - Step 1: Periodically inspect the condition of the joint sealant and reapply if necessary to maintain waterproofing and aesthetics.

Final considerations

- Storage of materials: keep the porcelain tile sheets and adhesive stored in a dry place until use.
- Space planning: plan the order of installation to allow access to areas without stepping on the newly laid planks.
- Precision tools: use precision tools, such as electric cutters with diamond blades, to ensure clean and precise cuts.

By following these detailed steps, you will be able to install large format porcelain tiles effectively and safely, ensuring a professional and durable finish to your interior flooring.

2.3.3.2. Outdoor pavements

Laying large format porcelain tile as outdoor flooring is a project

that requires precision, proper preparation and attention to detail to ensure a durable and aesthetically pleasing finish. The following is a detailed step-by-step guide to perform this task correctly.

Materials and tools required

- Large format porcelain tile sheets.
- High quality flexible cementitious adhesive for exteriors.
- Laser or bubble level.
- Serrated spatula (preferably 10-12 mm).
- Electric tile cutter with water.
- Leveling brackets and spacers.
- Vibrating machine for ceramics, the use of rubber hammer is not recommended.
- Adhesive mixer.
- Bucket and water.
- Work gloves.
- Knee pads.
- Trowel and trowel.
- Circular saw with diamond blade (for complex cuts).
- Waterproofing sealant for joints.
- Waterproofing membrane (if necessary).
- Leveling mortar (if necessary).
- Tape measure and marking pencil.
- Leveling system for tiles. Spacers and leveling wedges.

Surface preparation

- Cleanliness:
 - Step 1: clean the surface by removing all dirt, dust, grease and other contaminants with an industrial vacuum cleaner and specific detergents if necessary.
 - Step 2: wash the area with water to remove any detergent residue and allow to dry completely.
- Evaluation and leveling:
 - Step 1: Use a long level to check the flatness of the surface. The surface must be completely level to avoid future problems.
 - Step 2: If there are irregularities, correct with a self-leveling mortar. Follow the manufacturer's instructions for applying and allowing the mortar to cure.
- Waterproofing:
 - Step 1: If the area is subject to moisture, apply a waterproofing membrane over the surface before laying the sheets.

Step 2: Follow the manufacturer's instructions to ensure proper application and drying time.

Planning and measurement

- Measurement:

Step 1: Measure the total area to be paved to calculate the amount of material needed.

Step 2: Determine the starting point and mark a horizontal base line using a laser or bubble level. Make sure this line is perfectly level.

- Marking:

Step 1: Mark additional lines (grids) on the surface following the size of the planks to facilitate alignment during installation.

Step 2: make a preliminary design on the floor, placing the planks in the desired pattern to adjust cuts and avoid mistakes during installation.

Adhesive preparation

- Adhesive mixing:

Step 1: Mix the exterior flexible cementitious adhesive according to the manufacturer's instructions, making sure to obtain a homogeneous consistency without lumps.

Step 2: let the mixture stand for the indicated time (usually about 5 minutes) and then stir again.

Adhesive application

- Extension of the adhesive:

Step 1: apply the adhesive to the surface with a notched trowel (10-12 mm notched) ensuring even distribution.

Step 2: apply a thin layer of adhesive to the back of the plate (double gluing technique) to improve adhesion.

Placement of the plates

- Initial installation:

Step 1: Place the first sheet aligned with the guide lines. Press firmly from the center to the edges to avoid air bubbles.

Step 2: use a vibrating machine on the plate to ensure proper adhesion and leveling.

- Use of spacers:

Step 1: Insert leveling crossheads and spacers between the planks to maintain even spacing.

Step 2: check for constant levelness with a level, adjusting as necessary using the self-leveling system.

Adjustments and cuts

- Cutting:

Step 1: Measure and mark the sheets that need to be cut to fit edges, corners or other special areas.

Step 2: Use an electric tile cutter with water to make precise, clean cuts. The water powered cutter helps to reduce dust and make more precise cuts.

- Final adjustment::

Step 1: place the cut sheets in their corresponding places, making sure they fit perfectly.

Step 2: double-check the levelness and alignment of all plates before the adhesive dries completely.

Tile leveling system

Step 1: Use a tile leveling system that includes specific shims and spacers to help keep all tiles level and evenly spaced.

Step 2: Install the system according to the manufacturer's instructions, adjusting the shims to eliminate height differences between the planks.

Finishes

- Adhesive cleaning:

Step 1: Clean any excess adhesive from the plate surfaces with a damp sponge before drying.

Step 2: Check the joints and make sure they are clean and ready for sealant.

- Sealing of joints:

Step 1: Once the adhesive has cured according to the manufacturer's instructions (typically 24-48 hours), apply a suitable joint sealant.

Step 2: Use a rubber spatula to spread the sealant evenly into the joints. Wipe off excess with a damp sponge.

Additional tips

- Climatic conditions: avoid installation in extreme climatic conditions (very high or very low temperatures) to ensure proper curing of the adhesive.
- Safety: wear personal protective equipment, such as gloves, safety glasses and mask, to prevent accidents and exposure to dust and chemicals.
- Traffic conditions: wait the appropriate time (according to the adhesive manufacturer) before allowing foot traffic on the new pavement.

Maintenance

- Regular cleaning:

Step 1: clean the plates regularly with water and neutral soap to maintain their appearance.

Step 2: Avoid using abrasive cleaners that may damage the surface of the porcelain tile.

- Revision of seals:

Step 1: Periodically inspect the condition of the joint sealant and reapply if necessary to maintain waterproofing and aesthetics.

Final considerations

- Storage of materials: keep the porcelain tile sheets and adhesive stored in a dry place until use.
- Space planning: plan the order of installation to allow access to areas without stepping on the newly laid planks.
- Precision tools: use precision tools, such as electric cutters with diamond blades, to ensure clean and precise cuts.

Troubleshooting common problems

- Unleveling:

Cause: surface not properly leveled.

Solution: make sure the surface is perfectly level before starting the installation and use a tile leveling system.

- Fast drying adhesive:

Cause: working in large areas without an adequate plan.

Solution: work in small sections and mix the adhesive in manageable quantities to avoid drying before application.

- Adhesive bubbling:

Cause: insufficient pressure when placing the plates.

Solution: be sure to press down firmly on each iron and use a rubber hammer to remove air bubbles.

By following these detailed steps, you will be able to install large format porcelain tiles effectively and safely, ensuring a professional and long-lasting finish to your outdoor flooring.

2.3.3.3. Stairs

Complete guide to the installation of large format porcelain tile as a staircase covering

Covering stairs with large format porcelain tile is an excellent way to combine durability and modern aesthetics. This process requires meticulous preparation and attention to detail to ensure a durable and safe finish. Below is an extensive step-by-step guide.

Materials and tools required

- Large format porcelain tile sheets.
- High quality flexible cementitious adhesive.
- Laser or bubble level.

- Serrated spatula (preferably 10-12 mm).
- Electric tile cutter with water.
- Leveling brackets and spacers.
- Vibrating machine for ceramics, the use of rubber hammer is not recommended...
- Adhesive mixer.
- Bucket and water.
- Work gloves.
- Knee pads.
- Trowel and trowel.
- Circular saw with diamond blade (for complex cuts).
- Waterproofing sealant for joints.
- Waterproofing membrane (if necessary).
- Leveling mortar (if necessary).
- Tape measure and marking pencil.
- Leveling system for tiles.
- Profile for steps (anti-slip).

Surface preparation

- Cleanliness:

Step 1: clean the stairs by removing all dirt, dust, grease and other contaminants with an industrial vacuum cleaner and specific detergents if necessary.

Step 2: wash the stairs with water to remove any detergent residue and allow to dry completely.

- Evaluation and leveling:

Step 1: Use a long level to check the flatness of each step. The surface should be completely level.

Step 2: If there are irregularities, correct with a leveling mortar suitable for stairs. Follow the manufacturer's instructions for applying and allowing the mortar to cure.

- Waterproofing:

Step 1: If the stairs are in an area exposed to moisture, apply a waterproofing membrane to the surface before laying the planks.

Step 2: Follow the manufacturer's instructions to ensure proper application and drying time.

Planning and measurement

- Measurement:

Step 1: Measure each step (tread and riser) to calculate the amount of material needed and determine the precise cuts.

Step 2: Determine the starting point and mark a base line using a laser or spirit level to ensure correct alignment.

- Marking:

Step 1: Mark the cutting lines on the porcelain tile sheets to match the dimensions of each step.

Step 2: pre-design the floor, placing the planks in the desired pattern to adjust cuts and avoid mistakes during installation.

Adhesive preparation

- Adhesive mixing:

Step 1: Mix the flexible cementitious adhesive according to the manufacturer's instructions, making sure to obtain a homogeneous consistency without lumps.

Step 2: let the mixture stand for the indicated time (usually about 5 minutes) and then stir again.

Adhesive application

- Extension of the adhesive:

Step 1: apply the adhesive to the surface of the step with a notched trowel (10-12 mm notched) ensuring even distribution.

Step 2: apply a thin layer of adhesive to the back of the plate (double gluing technique) to improve adhesion.

Placement of the plates

- Initial installation:

Step 1: Place the iron on the tread of the step aligned with the guide lines. Press firmly from the center to the edges to avoid air bubbles.

Step 2: use the leveling machine on the plate to ensure proper adhesion and leveling.

- Installation of risers:

Step 1: place the iron on the riser of the step using the same procedure as for the treads.

Step 2: Make sure that the joints between the tread and riser are perfectly aligned and level.

- Use of spacers:

Step 1: Insert leveling crossheads and spacers between the planks to maintain even spacing.

Step 2: Check for constant levelness with a level, adjusting as necessary.

Adjustments and cuts

- Cutting:

Step 1: Measure and mark the sheets that need to be cut to fit edges, corners or other special areas.

Step 2: Use an electric tile cutter with water to make precise, clean cuts.

- Final adjustment::

Step 1: place the cut sheets in their corresponding places, making sure they fit perfectly.

Step 2: double-check the levelness and alignment of all plates before the adhesive dries completely.

Tile leveling system

Step 1: Use a tile leveling system that includes specific shims and spacers to help keep all tiles level and evenly spaced.

Step 2: Install the system according to the manufacturer's instructions, adjusting the shims to eliminate height differences between the planks.

Installation of step profiles

Step 1: place anti-slip profiles on the edges of the footprints to improve safety. These profiles can be made of aluminum, pvc or other suitable materials.

Step 2: Secure the profiles with suitable adhesive and check that they are level and well aligned.

Finishes

- Adhesive cleaning:

Step 1: Clean any excess adhesive from the plate surfaces with a damp sponge before drying.

Step 2: Check the joints and make sure they are clean and ready for sealant.

- Sealing of joints:

Step 1: Once the adhesive has cured according to the manufacturer's instructions (typically 24-48 hours), apply a suitable joint sealant.

Step 2: Use a rubber spatula to spread the sealant evenly into the joints. Wipe off excess with a damp sponge.

- Sealing of joints:

Step 1: Once the adhesive has cured according to the manufacturer's instructions (typically 24-48 hours), apply a suitable joint sealant.

Step 2: Use a rubber spatula to spread the sealant evenly into the joints. Wipe off excess with a damp sponge.

Additional tips

- Climatic conditions: avoid installation in extreme climatic conditions (very high or very low temperatures) to ensure proper curing of the adhesive.
- Safety: wear personal protective equipment, such as gloves, safety glasses and mask, to prevent accidents and

exposure to dust and chemicals.

- Traffic conditions: wait the appropriate time (according to the adhesive manufacturer) before allowing foot traffic over the new coating.

Maintenance

- Regular cleaning::
 - Step 1: clean the plates regularly with water and neutral soap to maintain their appearance.
 - Step 2: Avoid using abrasive cleaners that may damage the surface of the porcelain tile.
- Revision of seals:
 - Step 1: Periodically inspect the condition of the joint sealant and reapply if necessary to maintain waterproofing and aesthetics.

Final considerations

- Storage of materials: keep the porcelain tile sheets and adhesive stored in a dry place until use.
- Space planning: plan the order of installation to allow access to areas without stepping on the newly laid planks.
- Precision tools: use precision tools, such as electric cutters with diamond blades, to ensure clean and precise cuts.

Troubleshooting common problems

- Unleveling:
 - Cause: surface not properly leveled.
 - Solution: make sure the surface is perfectly level before starting the installation and use a tile leveling system.
- Fast drying adhesive:
 - Cause: working in large areas without an adequate plan.
 - Solution: work in small sections and mix the adhesive in manageable quantities to avoid drying before application.
- Adhesive bubbling:
 - Cause: insufficient pressure when placing the plates.
 - Solution: be sure to press down firmly on each iron and use a rubber hammer to remove air bubbles.

By following these detailed steps, you will be able to install large format porcelain tiles effectively and safely, ensuring a professional and durable finish on your stairs.

2.3.4 Edge and corner preparation

Complete guide for edge and corner preparation with large format porcelain tile slabs

Preparing edges and corners with large format porcelain tile sheets is a task that requires precision and care to ensure a

professional finish. Here is a complete guide to perform this task effectively:

Materials and tools required

- Large format porcelain tile sheets.
- Electric tile cutter with water.
- Diamond blade for precise cuts.
- Electric or manual sander with different grits of sandpaper (80, 120, 220).
- High quality flexible cementitious adhesive.
- Laser or bubble level.
- Serrated spatula (preferably 10-12 mm).
- Adhesive mixer.
- Bucket and water.
- Work gloves.
- Knee pads.
- Trowel and trowel
- Circular saw with diamond blade (for complex cuts).
- Tape measure and marking pencil.
- Leveling system for tiles.
- Corner profiles (aluminum, pvc or other suitable material).
- Waterproofing sealant for joints.
- Epoxy or filler for porcelain tile (optional for visible corners).
- Abrasive discs for polishing (optional).

Plate preparation and cutting

- Measuring and marking:
 - Step 1: Accurately measure the area where the planks will be placed, including the length and angle of corners and edges.
 - Step 2: Mark the cutting lines on the porcelain tile sheets using a tape measure and a marking pencil.
- Plate cutting:
 - Step 1: Use a water-powered electric tile cutter equipped with a diamond blade to make precise cuts. The water cutter helps to reduce dust and get cleaner cuts.
 - Step 2: For complex cuts and precise angles, use a circular saw with a diamond blade.

Song preparation

- Sanding of edges:
 - Step 1: After cutting the sheets, use an electric or hand sander to smooth the edges. Start with 80 grit sandpaper to remove any irregularities.

Step 2: switch to 120 grit sandpaper and then to 220 grit sandpaper to smooth and polish the edges until they are smooth to the touch.

- Edge finishing:

Step 1: If you want a more professional finish, use abrasive polishing discs to obtain a polished and shiny edge.

Step 2: For visible corners, consider applying epoxy or porcelain tile filler to the edges for a more aesthetic and resistant finish.

Corner preparation

- Miter cuts:

Step 1: To obtain a perfect corner, make miter cuts on the edges of the planks that will meet at the corner. This is done by cutting the boards at a 45 degree angle.

Step 2: Use a tile cutter capable of miter cuts or a circular saw with a diamond blade set at 45 degrees.

- Joining of plates:

Step 1: Apply flexible cementitious adhesive to the surfaces to be bonded. Use a notched trowel to ensure even distribution.

Step 2: Carefully miter cut the sheets together, making sure that the edges line up perfectly.

- Installation of corner profiles:

Step 1: Place corner profiles on the joints to protect the edges and to provide a finish clean. The profiles can be made of aluminum, pvc or other suitable materials.

Step 2: fix the profiles with suitable adhesive and check that they are well aligned and level.

Installation of plates

- Adhesive application:

Step 1: Mix the flexible cementitious adhesive according to the manufacturer's instructions.

Step 2: apply the adhesive to the surface with a notched trowel (preferably 10-12 mm), ensuring even distribution.

- Placement of plates::

Step 1: place the sheets on the prepared surface, pressing firmly from the center to the edges to avoid air bubbles.

Step 2: use the vibrating machine on the plates to ensure proper adhesion and leveling.

- Use of spacers and levelers:

Step 1: Insert leveling crossheads and spacers

between the planks to maintain even spacing.

Step 2: Check for constant levelness with a laser or bubble level, adjusting as necessary.

Finishes

- Adhesive cleaning:

Step 1: Clean any excess adhesive from the plate surfaces with a damp sponge before drying.

Step 2: Check the joints and make sure they are clean and ready for sealant.

- Sealing of joints:

Step 1: Once the adhesive has cured according to the manufacturer's instructions (typically 24-48 hours), apply a suitable joint sealant.

Step 2: Use a rubber spatula to spread the sealant evenly into the joints. Wipe off excess with a damp sponge.

Additional tips

- Climatic conditions: avoid installation in extreme climatic conditions (very high or very low temperatures) to ensure proper curing of the adhesive.
- Safety: wear personal protective equipment, such as gloves, safety glasses and mask, to prevent accidents and exposure to dust and chemicals.
- Traffic conditions: wait the appropriate time (according to the adhesive manufacturer) before allowing foot traffic on new surfaces.

Maintenance

- Regular cleaning:

Step 1: clean the plates regularly with water and neutral soap to maintain their appearance.

Step 2: Avoid using abrasive cleaners that may damage the surface of the porcelain tile.

- Revision of seals:

Step 1: Periodically inspect the condition of the joint sealant and reapply if necessary to maintain waterproofing and aesthetics.

Final considerations

- Storage of materials: keep the porcelain tile sheets and adhesive stored in a dry place until use.
- Space planning: plan the order of installation to allow access to areas without stepping on the newly laid planks.
- Precision tools: use precision tools, such as electric cutters with diamond blades, to ensure clean and precise cuts.

Troubleshooting common problems

- Unleveling:

Cause: surface not properly leveled.

Solution: make sure the surface is perfectly level before starting the installation and use a tile leveling system.

- Fast drying adhesive:

Cause: working in large areas without an adequate plan.

Solution: work in small sections and mix the adhesive in manageable quantities to avoid drying before application.

- Adhesive bubbling:

Cause: insufficient pressure when placing the plates.

Solution: be sure to press each plate firmly and use the ceramic vibrating machine to remove air bubbles.

By following these detailed steps, you will be able to prepare edges and corners with large format porcelain tile slabs from effectively and safely, ensuring a professional and durable finish on your coating projects.

2.3.5 Installation of countertops

Complete guide for the preparation of countertops with large format porcelain tile slabs

The use of large format porcelain slabs for countertops offers a durable, resistant and aesthetically pleasing solution for kitchens and bathrooms. This material is resistant to stains, scratches and high temperatures, making it an excellent choice for countertops.

The following is a step-by-step guide for the preparation and installation of countertops with large format porcelain tile slabs.

Materials and tools required

- Large format porcelain tile sheets.
- High quality epoxy or cementitious adhesive.
- Electric tile cutter with water.
- Diamond blade for precise cuts.
- Electric or manual sander with different grits of sandpaper (80, 120, 220).
- Adhesive mixer.
- Laser or bubble level.
- Serrated spatula (preferably 10-12 mm).
- Trowel and trowel.
- Circular saw with diamond blade (for complex cuts).

- Tape measure and marking pencil.
- Leveling system for tiles.
- Edge profile for countertops (optional).
- Filler for porcelain tile or epoxy.
- Waterproofing sealant for joints.
- Wooden or metal supports and structure for the countertop.
- Screws and anchors.
- Work gloves.
- Knee pads.

Surface preparation

- Construction of the base:

Step 1: Build a solid base for the countertop using high quality plywood or metal structure. The base must be perfectly level and able to support the weight of the porcelain tile. This is especially important for 6mm slabs.

Step 2: Secure the base to the kitchen cabinets or structural frame with appropriate screws and anchors.

- Evaluation and leveling::

Step 1: Use a laser or bubble level to make sure the base is completely level.

Step 2: If there are irregularities, adjust the base using shims or making corrections as necessary.

Measuring and cutting of plates

- Measurement:

Step 1: Accurately measure the countertop surface, including any necessary cutouts for sinks, cooktops or faucets.

Step 2: Mark the cutting lines on the porcelain tile sheets using a tape measure and a marking pencil.

- Plate cutting:

Step 1: Use a water-powered electric tile cutter equipped with a diamond blade to make precise cuts. The water cutter helps to reduce dust and get cleaner cuts.

Step 2: For more complex cutouts, such as the sink area or cooktops, use a circular saw with a diamond blade.

Preliminary considerations

In 12mm plates the maximum overhang without supports should be 20cm, in 20mm thick plates 30cm and provided that this overhang is not a working area (island in the bar area).

Song preparation

- Sanding of edges:
 - Step 1: After cutting the sheets, use an electric or hand sander to smooth the edges. Start with 80 grit sandpaper to remove any irregularities.
 - Step 2: switch to 120 grit sandpaper and then to 220 grit sandpaper to smooth and polish the edges until they are smooth to the touch.
- Edge finish:
 - Step 1: If you want a more professional finish, use abrasive polishing discs for a polished and shiny edge.
 - Step 2: Consider applying porcelain tile filler or epoxy filler to the edges for a more aesthetic and resistant finish.

Installation of plates

- Adhesive application:
 - Step 1: Mix the epoxy or cementitious adhesive according to the manufacturer's directions. Make sure the adhesive is suitable for high-strength surfaces and water exposure.
 - Step 2: apply the adhesive to the base surface with a notched trowel (preferably 10-12 mm), ensuring even distribution.
- Placement of plates:
 - Step 1: place the sheets on the prepared base, pressing firmly from the center to the edges to avoid air bubbles.
 - Step 2: use the vibrating machine on the plates to ensure proper adhesion and leveling.
- Use of spacers and levelers:
 - Step 1: Insert leveling crossheads and spacers between the planks to maintain even spacing.
 - Step 2: Check for constant levelness with a laser or bubble level, adjusting as necessary.

Edge and corner finishing

- Installation of edge profiles (optional):
 - Step 1: Place edge profiles on the edges of the countertop to protect the edges and provide a clean finish. The profiles can be made of aluminum, pvc or other suitable materials.
 - Step 2: fix the profiles with suitable adhesive and check that they are well aligned and level.

- Filling and polishing of joints:

Step 1: Fill the joints between the slabs with porcelain tile grout or epoxy grout. Use a putty knife to ensure a uniform finish.

Step 2: wipe off excess putty with a damp sponge before it dries.

Step 3: final polishing of edges and joints for a smooth and professional finish.

Final finishing

- Adhesive cleaning:
 - Step 1: Clean any excess adhesive from the plate surfaces with a damp sponge before drying.
 - Step 2: Check the joints and make sure they are clean and ready for sealant.
- Sealing of joints:
 - Step 1: Once the adhesive and filler have cured according to the manufacturer's instructions (typically 24-48 hours), apply a suitable joint sealant.
 - Step 2: Use a rubber spatula to spread the sealant evenly into the joints. Wipe off excess with a damp sponge.

Additional tips

- Climatic conditions: avoid installation in extreme climatic conditions (very high or very low temperatures) to ensure proper curing of the adhesive.
- Safety: wear personal protective equipment, such as gloves, safety glasses and mask, to prevent accidents and exposure to dust and chemicals.
- Conditions of use: wait the appropriate time (according to the adhesive manufacturer) before using the countertop to ensure complete curing.

Maintenance

- Regular cleaning:
 - Step 1: Clean countertops regularly with mild soap and water to maintain their appearance.
 - Step 2: Avoid using abrasive cleaners that may damage the surface of the porcelain tile.
- Revision of seals:
 - Step 1: Periodically inspect the condition of the joint sealant and reapply if necessary to maintain waterproofing and aesthetics.

Final considerations

- Storage of materials: keep the porcelain tile sheets and adhesive stored in a dry place until use.
- Space planning: plan the order of installation to allow access to areas without stepping on the newly laid planks.
- Precision tools: use precision tools, such as electric cutters with diamond blades, to ensure clean and precise cuts.

Troubleshooting common problems

- **Unleveling:**
Cause: surface not properly leveled.
Solution: make sure the base is perfectly level before starting the installation and use a tile leveling system.
- **Fast drying adhesive:**
Cause: working in large areas without an adequate plan.
Solution: work in small sections and mix the adhesive in manageable quantities to avoid drying before application.
- **Adhesive bubbling:**
Cause: insufficient pressure when placing the plates.
Solution: be sure to press down firmly on each iron and use a rubber hammer to remove air bubbles.

By following these detailed steps, you will be able to prepare countertops with large format porcelain tile slabs effectively and safely, ensuring a professional and durable finish.

2.3.6 Door covering**Complete guide for the installation of large format porcelain tile sheets as door cladding**

Door cladding with large format porcelain tile is a modern and elegant technique that enhances the durability and aesthetics of doors. This process requires careful planning, precision and attention to detail. The following is a step-by-step guide to perform this task effectively and safely.

Materials and tools required

- Large format porcelain tile sheets.
- High quality polyurethane or epoxy adhesive.
- Laser or bubble level.
- Serrated spatula (preferably 3-6 mm).
- Electric tile cutter with water.
- Diamond blade for precise cuts
- Electric or manual sander with different grits of sandpaper (80, 120, 220).
- Adhesive mixer.
- Tape measure and marking pencil.
- Leveling system for tiles (optional).
- Edge profiles for doors (optional).
- Filler for porcelain tile or epoxy (optional).
- Work gloves.
- Knee pads.
- Rubber spatula.
- Clamps and adhesive tape.
- Waterproofing sealant for joints.

Surface preparation

- **Cleanliness:**
Step 1: Clean the door by removing all dirt, dust, grease and other contaminants with a suitable cleaner.
Step 2: Wash the door surface with water to remove any cleaner residue and allow to dry completely.
- **Evaluation and leveling:**
Step 1: Use a laser or spirit level to check the flatness of the door surface. If there are irregularities, use a sander to level the surface.
Step 2: Make sure the door is completely smooth and free of defects that could affect the adhesion of the porcelain tile.

Measuring and cutting of plates

- **Measurement:**
Step 1: Accurately measure the door surface, including any necessary cutouts for locks, hinges or peepholes.
Step 2: Mark the cutting lines on the porcelain tile sheets using a tape measure and a marking pencil.
- **Plate cutting:**
Step 1: Use a water-powered electric tile cutter equipped with a diamond blade to make precise cuts. The water cutter helps to reduce dust and get cleaner cuts.
Step 2: For more complex cutouts, such as the area around locks or hinges, use a circular saw with a diamond blade.

Song preparation

- **Sanding of edges:**
Step 1: After cutting the sheets, use an electric or hand sander to smooth the edges. Start with 80 grit sandpaper to remove any irregularities.
Step 2: switch to 120 grit sandpaper and then to 220 grit sandpaper to smooth and polish the edges until they are smooth to the touch.

- Edge finish:

Step 1: If you want a more professional finish, use abrasive polishing discs for a polished and shiny edge.

Step 2: Consider applying porcelain tile filler or epoxy filler to the edges for a more aesthetic and resistant finish.

Installation of plates

- Adhesive application:

Step 1: Mix the polyurethane or epoxy adhesive according to the manufacturer's directions. Make sure the adhesive is suitable for vertical and high-strength surfaces.

Step 2: apply the adhesive to the door surface with a notched trowel (preferably 3-6 mm), ensuring even distribution.

- Placement of plates:

Step 1: place the sheets on the surface of the door, pressing firmly from the center to the edges to avoid air bubbles.

Step 2: Use clamps or tape to hold the sheets in place while the adhesive dries.

- Use of spacers and levelers (optional)::

Step 1: Insert spacers between plates to maintain even spacing if you are using multiple plates.

Step 2: Check for constant levelness with a laser or bubble level, adjusting as necessary.

Edge and corner finishing

- Installation of edge profiles (optional)::

Step 1: Place edge profiles on the edges of the door to protect the edges and provide a clean finish. The profiles can be made of aluminum, pvc or other suitable materials.

Step 2: fix the profiles with suitable adhesive and check that they are well aligned and level.

- Filling and polishing of joints:

Step 1: Fill the joints between the slabs with porcelain tile grout or epoxy grout. Use a putty knife to ensure a uniform finish.

Step 2: wipe off excess putty with a damp sponge before it dries.

Step 3: final polishing of edges and joints for a smooth and professional finish.

Final finishing

- Adhesive cleaning:

Step 1: Clean any excess adhesive from the plate

surfaces with a damp sponge before drying.

Step 2: Check the joints and make sure they are clean and ready for sealant.

- Sealing of joints:

Step 1: Once the adhesive and filler have cured according to the manufacturer's instructions (typically 24-48 hours), apply a suitable joint sealant.

Step 2: Use a rubber spatula to spread the sealant evenly into the joints. Wipe off excess with a damp sponge.

Additional tips

- Climatic conditions: avoid installation in extreme climatic conditions (very high or very low temperatures) to ensure proper curing of the adhesive.
- Safety: wear personal protective equipment, such as gloves, safety glasses and mask, to prevent accidents and exposure to dust and chemicals.
- Conditions of use: wait the appropriate time (according to the adhesive manufacturer) before using the countertop to ensure complete curing.

Maintenance

- Regular cleaning:

Step 1: Clean countertops regularly with mild soap and water to maintain their appearance.

Step 2: Avoid using abrasive cleaners that may damage the surface of the porcelain tile.

- Revision of seals:

Step 1: Periodically inspect the condition of the joint sealant and reapply if necessary to maintain waterproofing and aesthetics.

Final considerations

- Storage of materials: keep the porcelain tile sheets and adhesive stored in a dry place until use.
- Space planning: plan the order of installation to allow access to areas without stepping on the newly laid planks.
- Precision tools: use precision tools, such as electric cutters with diamond blades, to ensure clean and precise cuts.

Troubleshooting common problems

- Unleveling:

Cause: surface not properly leveled.

Solution: make sure the door is perfectly level before starting the installation and use a tile leveling system if necessary.

- Fast drying adhesive::

Cause: working in large areas without an adequate plan.

Solution: work in small sections and mix the adhesive in manageable quantities to avoid drying before application.

- Adhesive bubbling:

Cause: insufficient pressure when placing the plates.

Solution: be sure to press each plate firmly and use clamps or tape to hold the plates in place while the adhesive dries.

By following these detailed steps, you will be able to prepare countertops with large format porcelain tile slabs effectively and safely, ensuring a professional and durable finish.

2.3.7 Recommended adhesives and tools

Complete guide to recommended adhesives and tools for large format porcelain tile slabs

The installation of large-format porcelain tile requires the use of specific adhesives and tools to ensure a durable and aesthetic finish. The following is a complete guide to recommended adhesives and tools, classifying adhesives according to their use for both indoor and outdoor wall and floor coverings.

Recommended adhesives

- Flexible cementitious adhesive C2TE S1 :
Example: Mapei Keraflex Maxi S1
Characteristics: high flexibility, long open time, ideal for irregular surfaces, high adhesion.
- C2TE high performance cementitious adhesive:
Example: Ardex X77
Characteristics: long open time, high adhesion, slip resistance, easy to work with.

Adhesives for exterior coatings

- Flexible cementitious adhesive C2FTE S2:
Example: Mapei Keraflex Maxi S2
Characteristics: high flexibility, fast setting, weather resistant, ideal for exteriors.
- Two-component epoxy adhesive:
Example: Mapei Kerapoxy
Characteristics: chemical resistance, high adhesion, suitable for areas exposed to water and chemicals.

Adhesives for indoor flooring

- Flexible Cementitious Adhesive C2TE S1:
Example: Mapei Ultraflex LFT
Characteristics: high flexibility, long open time, suitable for large format pavements, resistant to compression.

- High Performance Cementitious Adhesive C2TE:

Example: Laticrete 254 Platinum

Characteristics: high adhesion, high resistance to slippery, easy to work with, suitable for areas with high traffic.

Adhesives for outdoor flooring

- Flexible Cementitious Adhesive C2FTE S1:

Example: Ardex X78

Characteristics: high flexibility, fast setting, weather and moisture resistant, ideal for exteriors

- Polyurethane Adhesive:

Example: Bostik Flexbond

Characteristics: high flexibility, good adhesion, resistant to water and temperature changes, ideal for areas with structural movements.

Recommended tools. Cutting tools

- Water powered electric tile cutter:
Example: Rubi DC-250
Features: precise cutting, dust reduction, suitable for long and straight cuts.
- Circular saw with diamond blade:
Example: Makita 4100KB
Features: ideal for complex cuts and precise adjustments.
- Diamond disc:
Example: Bosch Expert for Ceramic
Features: long life, clean and precise cut in porcelain tile.

Application tools

- Serrated spatula:
Tooth pitch: 10-12 mm for large formats.
Example: Rubi 65936
Characteristics: uniform distribution of the adhesive.
- Adhesive mixer:
Example: Collomix XO 6
Characteristics: homogeneous mixture, suitable for high viscosity adhesives..

Leveling tools

- Laser level
Example: Bosch GLL 3-80

Features: high precision, clear horizontal and vertical lines.

- Tile leveling system:

Example: Raimondi Tile Leveling System

Features: keeps tiles level, easy to use.

Finishing tools

- Electric or manual sander:

Example: Festool ROTEX RO 150 FEQq

Features: different grits of sandpaper, suitable for smoothing edges and edges.

- Rubber hammer:

Example: Rubi 24975

Characteristics: soft blows, avoids damage to the porcelain tile.

- Rubber spatula:

Example: QEP Grout Float

Characteristics: uniform application of sealants and mastics.

Measuring and marking tools

- Tape measure and marking pencil:

Example: Stanley FatMax

Features: accurate measurement, visible markings.

- Square and ruler:

Ejemplo: Irwin Combination Square

Features: precision in angles and alignment.

Additional accessories

- Work gloves:

Example: Mechanix Wear

Characteristics: protection and grip.

- Mechanix Wear Knee pads:

Example: Troxell USA Super Soft Knee Pads

Features: comfort and protection during prolonged work.

- Bucket and sponge:

Example: OX Pro Heavy Duty Bucket

Features: cleaning and mixing of materials.

Final considerations

- Storage of materials: keep adhesives and porcelain tile sheets stored in a dry, temperature-controlled place until use.

- Installation conditions: avoid working in extreme weather conditions and make sure the surface is properly prepared.
- Safety: wear personal protective equipment at all times to avoid accidents and injuries.

Troubleshooting common problems

- Adherence problems:

Cause: dirty or poorly prepared surface.

Solution: clean and prepare the surface properly before the application of the adhesive.

- Unleveling of plates:

Cause: incorrect use of the leveling system.

Solution: be sure to use a proper leveling system and check it constantly during installation.

- Fast setting of the adhesive:

Cause: mixing of adhesive in large quantities.

Solution: mix the adhesive in small manageable quantities and work in small sections.

By following this detailed guide, you will be able to install large format porcelain tiles effectively and safely, ensuring a professional and durable finish.

2.4 Cleaning and maintenance

Large format porcelain tiles are an excellent choice for wall and floor coverings due to their durability, strength and aesthetic appeal. However, to maintain these qualities over time, proper cleaning and maintenance is crucial. The following is a complete guide to cleaning and maintenance of large format porcelain tile slabs.

Daily and regular cleaning. Materials needed

- Warm water.
- Neutral soap or neutral ph cleaner.
- Soft cloths or microfiber mops.
- Soft bristle brush (optional).
- Bucket.

Procedure

- Sweeping or vacuuming:

Step 1: Sweep or vacuum the area to remove dust and surface dirt. Use a soft-bristled broom or a vacuum cleaner with an attachment suitable for hard surfaces.

- Preparation of the cleaning solution:

Step 2: Fill a bucket with warm water and add a little neutral soap or neutral ph cleaner. Avoid using strong acidic or alkaline cleaners that may damage the porcelain tile.

- Cleanliness:

Step 3: Dip a soft cloth or microfiber mop into the cleaning solution and wring it out well.

Step 4: wipe or mop the surface of the porcelain tile, making sure to cover all areas. For stubborn stains, use a soft bristle brush.

Step 5: Rinse the cloth or mop with clean water and repeat the process to remove any soap residue.

- Drying:

Step 6: Dry the surface with a soft, dry cloth to prevent water spots from forming.

Deep cleaning. Materials needed

- Specific cleaner for porcelain tile or mild alkaline cleaner.
- Soft bristle brush or nylon broom.
- Soft cloths or microfiber mops.
- Bucket.

Procedure

- Preparation of the area:

Step 1: remove any furniture or objects from the surface to be cleaned to facilitate access.

- Sweeping or vacuuming:

Step 2: Sweep or vacuum the area to remove dust and surface dirt.

- Preparation of the cleaning solution::

Step 3: Fill a bucket with warm water and add porcelain cleaner or mild alkaline cleaner according to the manufacturer's instructions.

- Application of the cleaner:

Step 4: Apply the cleaning solution to the porcelain surface with a cloth or mop, making sure to cover all areas.

Step 5: Allow the cleaner to work for the time recommended by the manufacturer (usually a few minutes).

- Scrubbing:

Step 6: Use a soft bristle brush or nylon broom to scrub the surface to remove stubborn stains and accumulated dirt.

- Rinse:

Step 7: Rinse the surface with clean water to remove any cleaner residue. Use a clean cloth or mop for this step.

- Drying:

Step 8: Dry the surface with a soft, dry cloth to prevent water spots from forming.

Removal of specific stains. Materials needed

- Sodium bicarbonate.
- Oxygenated water.
- White vinegar.
- Isopropyl alcohol.
- Soft cloths.
- Soft bristle brush.

Procedure

- Grease or oil stains:

Step 1: apply a small amount of isopropyl alcohol to the stain.

Step 2: Rub gently with a soft cloth until the stain disappears.

Step 3: clean the area with water and neutral soap, then rinse and dry.

- Coffee, tea or wine stains:

Step 1: mix baking soda with hydrogen peroxide to form a paste.

Step 2: apply the paste on the stain and leave for 10- 15 minutes.

Step 3: scrub with a soft bristle brush and then clean with water and neutral soap.

- Mold or mildew stains:

Step 1: Mix a solution of white vinegar and water in equal parts.

Step 2: apply the solution on the stain and let it act for 10 minutes.

Step 3: scrub with a soft bristle brush, rinse with clean water and dry.

Preventive maintenance.

- Sealing of joints. Materials needed:

Joint sealant.

Brush or sealer applicator.

Soft cloths.

Procedure

Step 1: Make sure the joints are clean and dry.

Step 2: Apply the joint sealant with a brush or

applicator following the manufacturer's instructions.

Step 3: Wipe off any excess sealer with a soft cloth before it dries.

Step 4: Allow the sealer to dry for the recommended time before using the surface.

Surface protection

- Use of carpets and mats:
Place rugs or mats at entryways to reduce the amount of dirt and abrasive particles that can scratch porcelain tile.
- Furniture protectors:
Use felt pads under furniture legs to avoid scratching the surface of the porcelain tile.
- Immediate spill clean-up:
Clean up any liquid or food spills immediately to avoid persistent stains.

Additional recommendations

- Avoid abrasive cleaners:
Do not use abrasive cleaners, steel wool pads or hydrofluoric acid products, as they can damage the surface of the porcelain tile.
- Regular maintenance:
Perform a thorough cleaning periodically, at least once a month, to maintain the appearance and durability of the porcelain tile.
- Revision of seals:
Periodically inspect the condition of the joint sealant and reapply as necessary to maintain waterproofing and aesthetics.

Troubleshooting common problems

- Persistent stains:
Cause: use of unsuitable cleaners or failure to clean up spills immediately.
Solution: use specific cleaners for porcelain tile and clean spills immediately. For stubborn stains, use a mixture of baking soda and hydrogen peroxide.
- Appearance of scratches:
Cause: dragging of furniture or abrasive particles.
Solution: use felt pads on furniture and carpets in high traffic areas.
- Dirt accumulation in joints:
Cause: inadequate cleaning or lack of sealing.

Solution: clean the joints regularly with a soft bristle brush and apply a joint sealant.

By following this complete guide, you will be able to keep your large format porcelain tiles in perfect condition, ensuring their durability and beauty over time.

3 Warranty and certifications

WARRANTY This warranty covers any manufacturing defects under normal conditions of use and with proper installation and assembly in accordance with APE CERAMICA S.L.U. recommendations, for the period specified in the time of coverage section. APE CERAMICA S.L.U. guarantees that its products covered by this warranty are of first quality.

and are backed by several certificates, including ISO 9001. A thorough check of the condition of the goods is required at the time of delivery. Any anomaly, damage or breakage detected during transport must be noted on the delivery note.

COVERAGE This warranty covers all APE CERAMICA S.L.U. products.

If APE CERAMICA S.L.U. has a claim for manufacturing defects covered by this warranty, APE CERAMICA S.L.U. will perform the necessary tests to establish the conformity of the product. If it is found that the product does not meet the applicable standards, APE CERAMICA S.L.U. will replace the defective product with an equal one, reserving the right, at APE CERAMICA S.L.U.'s discretion, to make cash refunds, limited to the net value of the product on the date of purchase. In the event that the product to be replaced is discontinued, a product with similar characteristics in terms of appearance and quality, available at that time, will be selected. New parts cannot be guaranteed to match exactly in color, gloss and texture to existing parts. **WARRANTY COVER TIME** This warranty certificate is valid for 3 years from the date of delivery of the product as stated on the invoice or delivery note and will only be valid for the first user. Replacement of a product or return in money in case of claim will not modify or extend the original terms, unless the imperative laws in each territory provide otherwise. **WARRANTY CONDITIONS** APE CERAMICA S.L.U. is obliged to repair or replace the products covered by this warranty, provided that the following conditions are met:

- That the product has been purchased from an Official Distributor.
- That it has not been altered or modified since leaving the factory.
- That all installation, use and maintenance recommendations of APE CERAMICA S.L.U. have been followed.
- That the products have not been used and have not been exposed indefinitely in any exhibition.
- That a valid proof of purchase is presented by the person claiming the application of the warranty.

- That the purchase price of the product has been fully satisfied. **EXCLUSIONS** This warranty covers defects related to the intrinsic quality of the product due to manufacturing defects, and does not cover the following situations:
- Damage and breakage caused by improper handling or storage by the customer or carrier.
- Damages derived from an inadequate, incorrect use or contrary to APE CERAMICA S.L.U. recommendations.
- Damage caused by adverse or inappropriate environmental conditions, such as extreme temperatures or contact with aggressive chemicals.
- Defects caused by the installation of the product in non-recommended or inadequate places according to APE CERAMICA S.L.U. indications.
- Damage resulting from lack of proper product maintenance.
- Any alteration of the original product, including repairs and/or interventions not authorized by APE CERAMICA S.L.U.
- Variations in shade, gloss, color and texture inherent in the nature of the product.
- Deficiencies resulting from improper installation or assembly of the product.
- Damage caused by force majeure, including but not limited to floods, earthquakes, fires and other natural disasters.

Complaints procedure

To make this warranty effective, the purchaser must notify APE CERAMICA S.L.U. in writing of the existence of the defect within the warranty period.

Exclusions

Since ape ceramica s.l.u.'s warranty is related to the intrinsic quality of the products, it does not cover:

- The cost of installation and reinstallation materials;
- Any legal interest on the value paid for the products;
- Damages, whether direct or indirect, that may arise before or during the claim or repair process in the commercial, industrial, professional or residential activities of the purchaser, the user of the product or third parties;
- The costs of materials and labor associated with the reinstallation of the product covered by the warranty after replacement by APE CERAMICA S.L.U., nor the additional repairs or modifications such as plumbing, electrical, coatings, plating and modifications necessary for the replacement of the product covered by this warranty (these repairs and modifications will be the responsibility of the customer);
- No other costs not described in this certificate.

APE CERAMICA S.L.U. works continuously in the development and improvement of its products, so that, during the term of

APE CERAMICA S.L.U. reserves the right to modify the technical and design specifications of its products without prior notice.

APE CERAMICA S.L.U. reserves the right to visit the site, on a previously agreed date, to examine the product and verify the warranty conditions.

APE CERAMICA S.L.U. SHALL NOT ASSUME ANY LIABILITY FOR SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES; INCLUDING, BUT NOT LIMITED TO: THE LOSS OF PROFITS, INCOME OR INFORMATION (EITHER DIRECTLY OR INDIRECTLY) OR COMMERCIAL LOSS DUE TO INFRINGEMENT OF ANY EXPRESS OR IMPLIED WARRANTY OF ITS PRODUCT, EVEN IF APE CERAMICA S.L.U. HAS BEEN PREVIOUSLY ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Some local jurisdictions do not allow the exclusion or limitation of special, indirect, incidental or consequential damages, so this limitation or exclusion may not apply to you.

EXCEPT WHERE PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THIS PRODUCT IS EXPRESSLY EXCLUDED.

Some local laws do not allow limitations on how long an implied warranty lasts, so this limitation may not apply to your jurisdiction.

Complaints procedure

If you wish to make this warranty valid, please follow these steps:

- Verify that you have complied with all the steps and requirements established in the APE CERAMICA S.L.U. installation, use and maintenance manuals.
- Report in writing to the authorized dealer/seller or directly to APE CERAMICA S.L.U., within 30 days from the appearance of the damage or defect.

The action to claim compliance with the provisions of the additional commercial warranty shall be time-barred six months after the end of the warranty period.

This document is intended for all types of customers worldwide, so there may be mandatory laws in certain territories that give you greater rights than those described here.