

FONDOVALLE

6.5 mm

technical manual

6.5 mm porcelain stoneware slabs

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Ceramica Fondovalle is one of the leading international companies for the production and marketing of porcelain stoneware slabs and tiles. Our success is the result of productive competence and experimentation, together with a “know-how” that is typical of our Italian tradition, excellently expressed in surfaces that bring together strength and beauty, to create new beautiful environments in which to live.

ceramica fondovalle

ceramic technology and culture



For over 50 years we have combined our ceramics-making tradition with innovative technology and a forward-thinking style. Now, we are part of Italcera, an international group that gathers together the most reputable ceramic tile and bathroom furnishings brands under its name and whose orientation will help us to expand and consolidate our vision. Supported by our research and design activities, we think beyond the mere manufacture of tiles, striving instead to produce lasting quality.

Our porcelain stoneware interprets with strength and naturalness the original and unique character of surfaces using a variety of materials, enhanced by the large size of the slabs. Our range is able to satisfy all the needs of contemporary architecture, to furnish original and creative environments with refined and functional solutions, guaranteeing maximum planning and perfect stylistic coordination for floors and walls.

slender lightweight strong

Alongside a thickness of 6.5 mm and a weight of 15.5 kg/sqm, this material also features incredible strength and resistance. (Bending resistance $\geq 50\text{N/mm}^2$; breaking load $> 1.500\text{ N}$)

large modular sizes

Available in a range of sizes to meet the needs of contemporary architecture. Modular sizes can be mixed and matched, with 2 mm joints between the tiles.

self leveling

These materials offer strength, elasticity, and flexibility. They can be used to create perfectly flat surfaces, which other materials don't allow.

easy to handle

Even in the 240 cm size, the slabs are easily moved around on the worksite and need no special hoisting systems (e.g. no platforms, ...). They are also easy to manoeuvre in narrow spaces, such as hallways, stairways, etc.

easy to lay

Thanks to the slender size and the laying equipment available today, cuts and holes are quickly and easily made.

easy to clean

The compact nature and non-absorbency of the material's surface mean the slabs are easily cleaned with household detergents.

eco-friendly

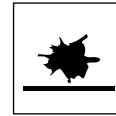
Use of natural raw materials, lower energy consumption per square metre, and green products for everyday cleaning, mean this material meets new environmental requirements.

a wide range of uses

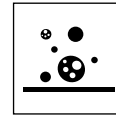
Wall tiling indoors and out, flooring and paving, for homes and light business use, plus overlaying on existing floors and pavements too. Ideal for situations such as heated floors and for covering doors, work tops, etc.



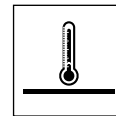
**TOTALLY
WATERPROOF**



STAINPROOF



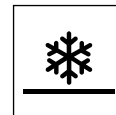
**RESISTANT TO MOULD,
MILDEW, AND FUNGUS**



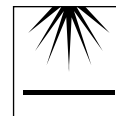
**RESISTANT TO HEAT AND
HIGH TEMPERATURES**



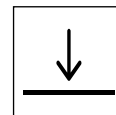
**RESISTANT TO CHEMI-
CALS, ACIDS, BASES,
AND SOLVENTS**



FROSTPROOF



UV-RESISTANT



**WITHSTANDS
BENDING**

These products are the result of a unique cutting-edge manufacturing process developed by Ceramica Fondovalle at its plant in Casona di Marano, in the magnificent Sassi di Rocca Malatina natural park, working in partnership with one of the major leaders in automated systems for the ceramic tile industry. These materials offer advanced technical features and are manufactured in compliance with Fondovalle's highest technical and quality standards, respecting the natural environment of the surrounding area.

6.5 mm porcelain stoneware

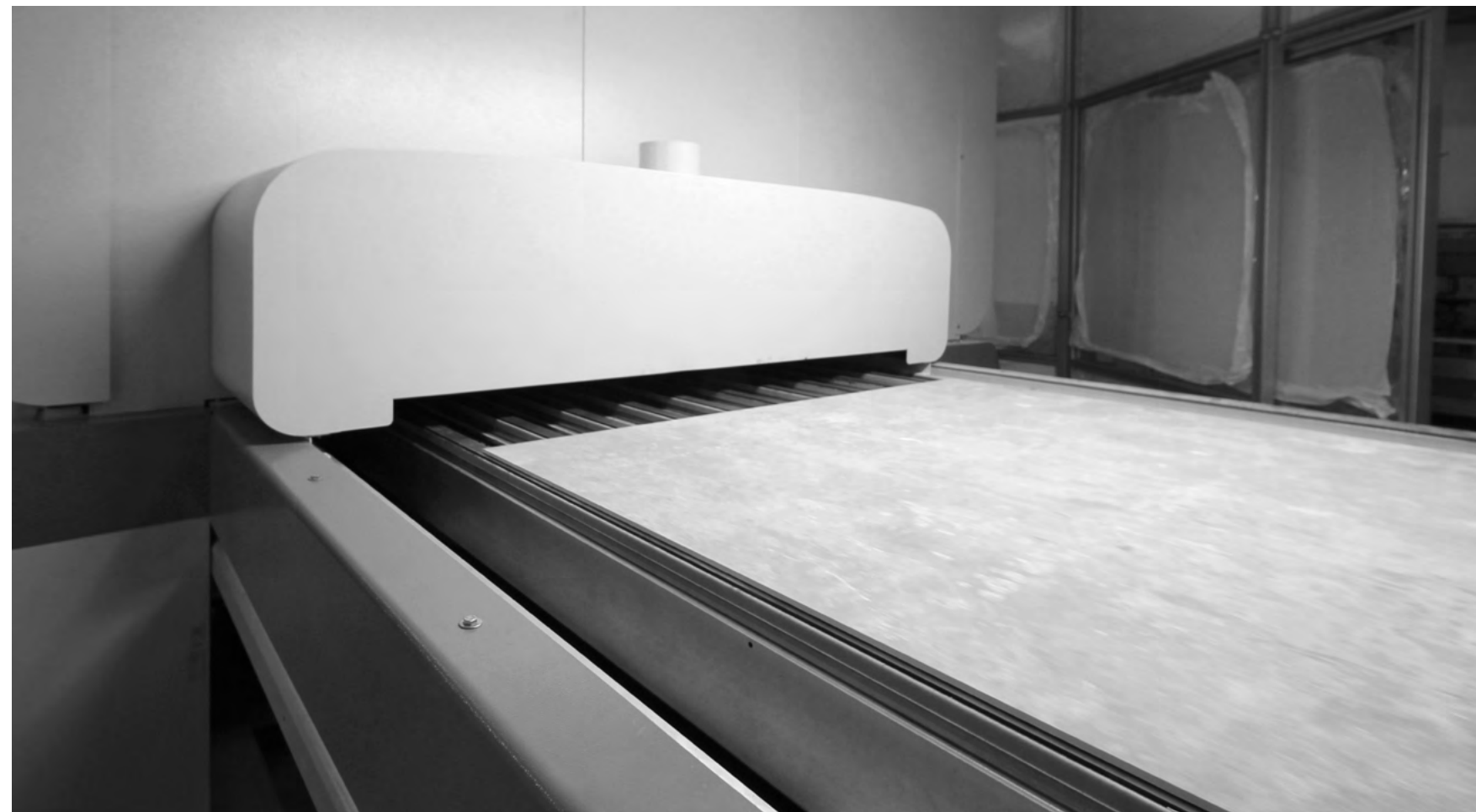
**high visual impact
and high performance**



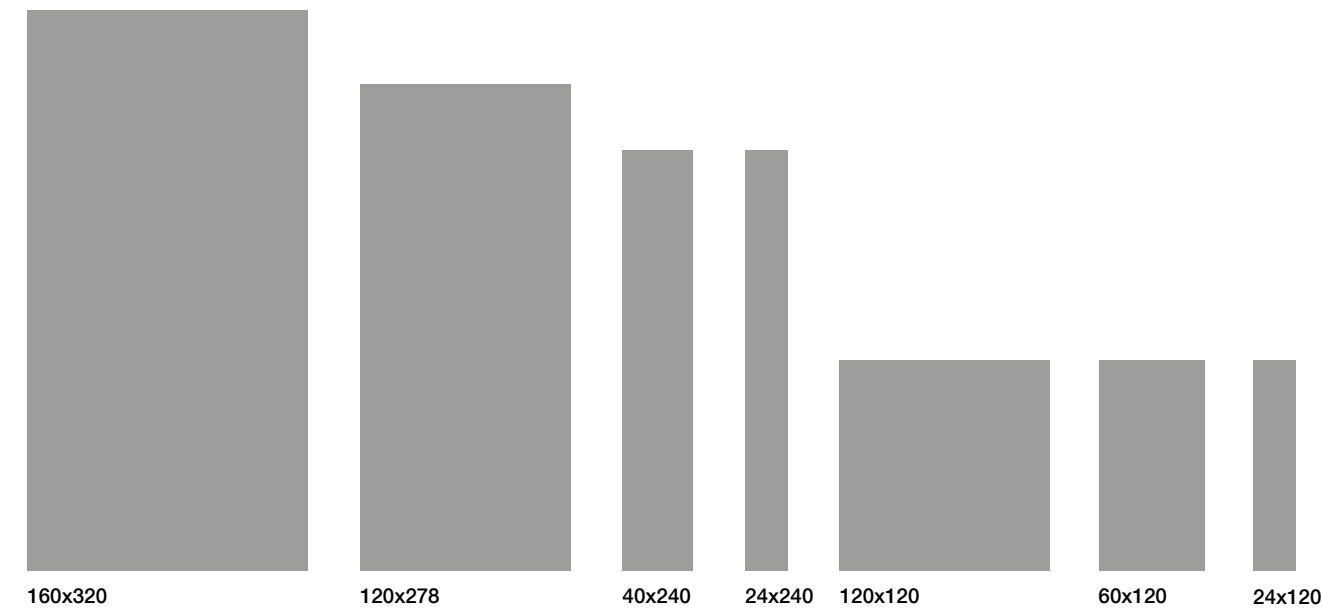
The new technology offers the possibility to use and mix traditional or new-generation materials, enhancing and stimulating the creativity and research of our technical staff. The 6.5 mm thick slabs are produced in various extra-large sizes to meet contemporary design needs. This manual provides the main technical information for correct use of the slabs during the various transport, processing, and maintenance stages.

6.5 mm porcelain stoneware

unprecedented range of sizes and thickness



Porcelain stoneware ceramic slabs, Group Bla UGL
Natural, Real Matt, Honed, Glossy Straightened, 6.5 mm thick



01_slab packing

160x320

PAL249

Crate 160x320 cm / H. 40,4 cm



120x278

PAL268

Crate 120x278 cm / H. 31,5 cm



PAL267

Crate 120x278 cm / H. 39 cm

160x320 | 120x278

CAV011

Metal A-frame 160x320 cm



M ² SQM	pcs. x	m ² x	kg x	x	m ² x	kg x	m ² x pcs.	kg x m ²	kg box	total kg	crate overall dimensions	
160x320	PAL249	1	5,12	80,00	14	71,68	1120,00	5,120	15,50	130	1250,00	343,2x172,6x36,2 cm
160x320	CAV006	1	5,12	80,00	42	215,04	3360,00	5,120	15,50	162	3522,00	330x75x196,8cm
160x320	CAV011	1	5,12	80,00	42	215,04	3360,00	5,120	15,50	123	3483,00	338,6x75x185,7 cm
120x278	PAL267	1	3,33	51,61	18	59,94	929,00	3,330	15,50	101	929,00	134x291x39 cm
120x278	CAV009	1	3,33	51,61	44	146,52	2271,00	3,330	15,50	124	2395,00	288x75x156,6 cm
120x278	CAV012	1	3,33	51,61	44	146,52	2271,00	3,330	15,50	109	2380,00	290x75x145,8 cm
40x240	PAL247	1	0,96	14,88	36	34,56	535,68	0,960	15,50	55	590,68	253x94x30,4 cm
24x240	PAL247	1	0,58	8,93	54	31,32	482,11	0,576	15,50	56	538,11	253x94x30,4 cm
120x120	PAL265	2	2,88	44,64	20	57,60	892,80	1,440	15,50	37	929,80	130,2x130,2x40 cm
120x120	CAV008	2	2,88	44,64	22	63,36	982,00	1,440	15,50	66	1048,00	127x75x155 cm

120x120

PAL253

Crate 120x120 cm / H. 56,2 cm



PAL265

Crate 120x120 cm / H. 25,5 cm



40x240 | 24x240

PAL247

Crate Doghe H. 30,4 cm



IPACKAGING FOR SLABS SIZES 160x320 - 120x278 - 40x240 - 24x240

Packaging code	Slab size	Packaging description	Thickness	Packaging content	Crate overall dimensions	Weight of empty packaging
PAL249	160x320	Crate 160x320 H. 40,4	6,5 mm	Crate for 1 to 14 Slabs	343,2x172,6x36,2 cm	130
CAV006	160x320	A-frame 160x320	6,5 mm	Trestle Max 42 Slabs	330x75x199,6 cm	206
CAV001	160x320	Metal A-frame 160x320	6,5 mm	Trestle Max 42 Slabs	330x75x190 cm	150
	Trestle Max 44 Slabs					
PAL267	120x278	Crate 120x278 H. 39	6,5 mm	Crate for 10 to 18 Slabs	291x132x39 cm	112
PAL268	120x278	Crate 120x278 H. 31,5	6,5 mm	Crate for 1 to 9 Slabs	291x132x31,5 cm	101
CAV009	120x278	A-frame 120x278	6,5 mm	Trestle Max 44 Slabs	288x75x156,6 cm	137
PAL247	40x240 24x240	Crate Boards H. 30,4	6,5 mm	Crate for Trims Max 36 pz - 40x240 Max 54 pz - 24x240	253x94x30,4 cm	56
CAV011	160x320	Metal A-frame 160x320	6,5 mm	Max 42 pz - 160x320	338x75x186 cm	123
	120x278			Max 44 pz - 160x320		

PACKAGING FOR SLABS SIZES 120x120

Packaging code	Slab size	Packaging description	Thickness	Packaging content	Crate overall dimensions	Weight of empty packaging
PAL253	120x120	Crate 120x120 H. 56,2	6,5 mm	Crate for 8 to 20 boxes	130,2x130,2x40 cm	37
	"LL" linear step 33x120x5		6,5 mm	Crate for 7 to 15 boxes		
PAL265	120x120	Crate 120x120 H. 25,5	6,5 mm	Crate for 1 to 7 two piece boxes	133x129x28 cm	34
			"LL" linear step 33x120x5	6,5 mm		
CAV008	120x120	A-frame 120x120	6,5 mm	Max 22 two piece boxes	127x75x155 cm	83

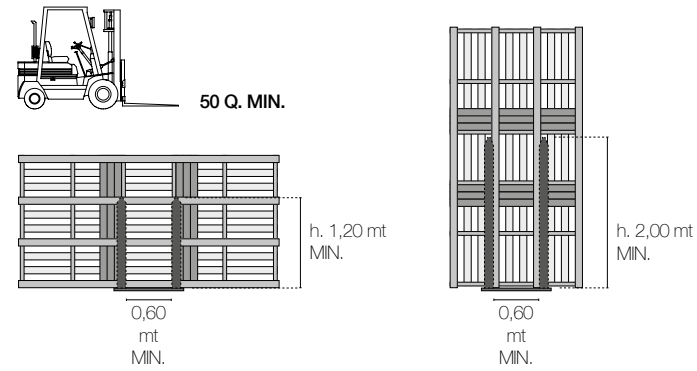
The images are purely indicative. Fondovalle reserves the right to modify the packaging at any time.

02_box handling

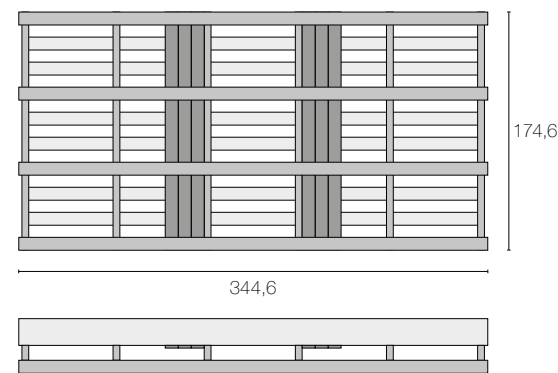
For correct crate handling a forklift truck is required, with forks that are at least 1.20 m long if picking up the crates from the long side. If picking up from the short side, the forks must be at least 1.80 m long for the crates measuring 120x240 and at least 2.00 m long for the 160x320 crates. The forks must be at least 60 cm apart. In normal conditions, the forks must be positioned in the middle of the long side of the pallet so that they provide a stable hold all the way across the width of the pallet.

For more details, please visit our site at www.fondovalle.it

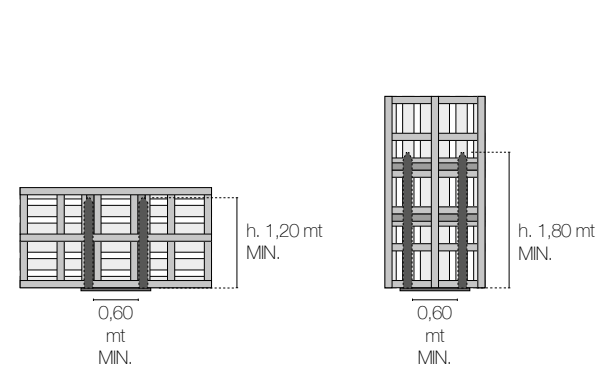
handling of boxes for 160x320 slabs



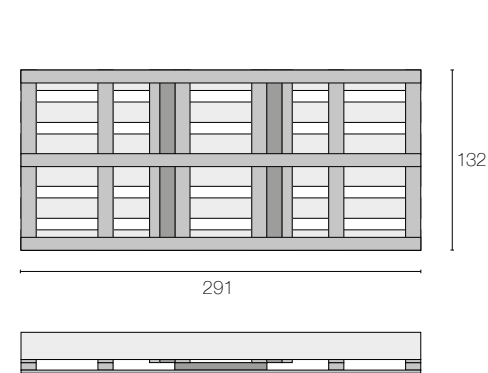
“External” dimension of box
344,6x174,6x40,4 cm



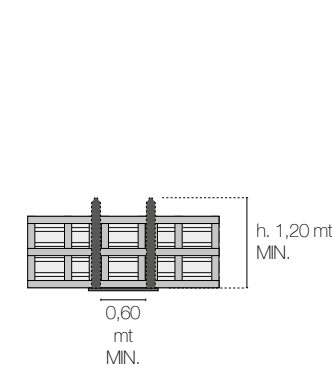
handling of boxes for 120x278 slabs



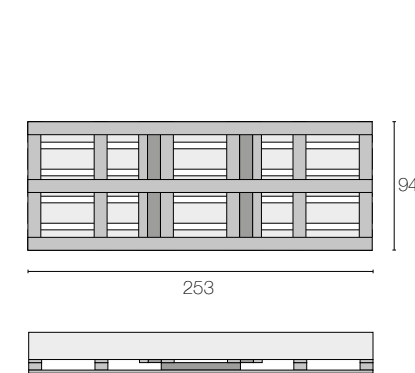
“External” dimension of box
291x132x39 cm



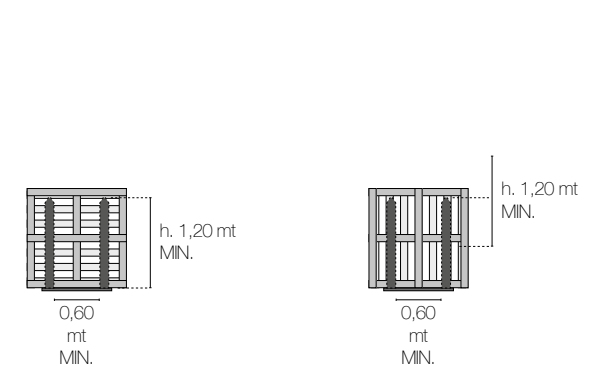
handling of boxes for 40x240 | 24x240 slabs



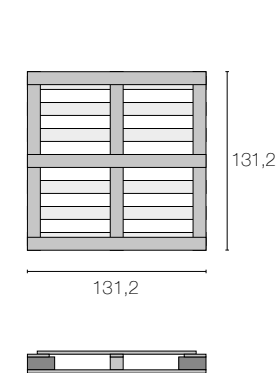
“External” dimension of box
253x94x30,4 cm



handling of boxes for 120x120 slabs

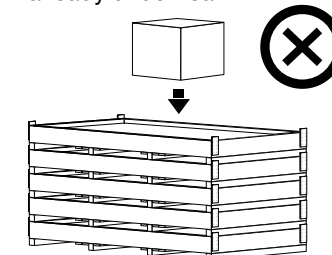


“External” dimension of box
131,2x131,2x56,2 cm



warnings

Do not stack any kind of items on top other than the crates already underneath.



03_slab handling

The 6.5 mm products weigh just 15.5 kg per sqm, which means they are much easier to handle than their thicker conventional counterparts, such as marble, granite, and natural stone.

- With a surface area of 3.33 sqm, the 120x278 size slabs weigh approximately 51 kg each and can be easily handled manually by two people.
- With a surface area of 1.44 sqm, the 120x120 size slabs weigh 23 kg each and can be lifted by one person on their own.

To ensure you handle your slabs properly, we recommend you use special handling systems equipped with suction cups which allow you to move the slabs both manually and when using specific trolleys. For example:

- Free-Move System by Raimondi
- Superstick system by Brevetti Monolith



Aluminium frame with suction cups – this system is convenient because it can be dismantled for transportation purposes



Moving to other floors



Aluminium trolley



Handling with a trolley

slab storage on worksite

Until you are ready to lay them, the slabs can be stored either vertically or horizontally. If several slabs need to be stacked up, make sure they are clean and that the base support surface is flat.

For vertical storage, the slabs need to be laid horizontally on a piece of wood.



04_slab laying

To ensure the best technical surface results and finish, you will need to make sure you have a proper design and lay the materials properly. On this note, please remember that that technical standard UNI 11493 was introduced in Italy in June 2013, which relates to ceramic tile laying.

To ensure long-lasting mechanical strength and appearance of the finished tiling, you will need to:

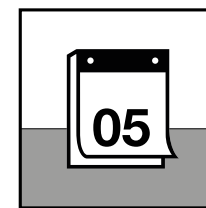
- check suitability of the subfloor (section n. 04.1);

- lay the slabs products using the best fitting techniques, only some aspects of which are discussed in this manual (section n. 04.2)
- choose an appropriate adhesive for the material type and intended use (section n. 04.2)

Certain Fondovalle collections are also available in a 10 mm-thick version to meet the requirements of unusual sub-floors or areas exposed to high concentrations of heavyweight traffic.

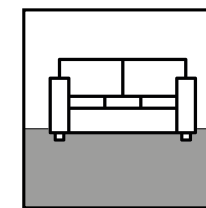
04.1_subfloor: requirements

The slabs can be laid on any type of subfloor except freshly laid mortar beds which have not yet set properly.



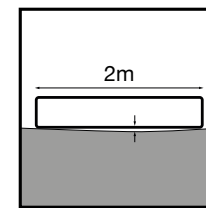
Stability and setting

Make sure you wait for the setting time required based on the type of compound used.



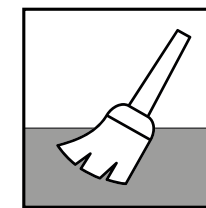
Mechanically resistant

The mechanical strength of the subfloor must be suitable for the loads to which it will be exposed and for the intended use.



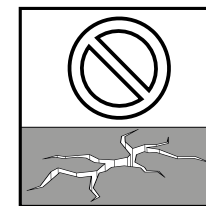
Flatness

Lay the material on flat subfloors only. Flatness can be checked using a screed board that is at least 2 m long, by resting it on top of the slab in various directions. To make up for any unevenness, adjust the base prior to laying, using suitable levelling products.



Cleanliness

Clean the subfloor to remove any yard dust or cement lump residues. To lay on existing floors, make sure you clean the floor properly beforehand using suitable detergents.



No cracks

All cracks need to be filled before laying. Any pre-existing expansion joints must be either filled in or completed when the laying the material.

04.2_subfloor: guidelines for different types of screed

The section below discusses different types of screeds and plaster/render.

• Conventional cement screeds

Screeds must be suitably thick, which means at least 4 cm in the case of a separate screed. The composition of the screed mixture must be decided based on the mechanical strength required. Flatness should be checked as described in the previous section. The screed should be compact and even

throughout the body; any cracks in the screed surface must be sealed with epoxy resin so that surface is a single, unbroken piece. The screeds must be properly set and the waiting time required before laying is approximately 7-10 days per centimetre (screed thickness).

- **Heated screeds**

As regards heated screeds, you will need to follow the normal instructions for screeds and those given by the system's manufacturer. It is also vitally important to switch on the system before laying, as required by UNI EN 1264-4. The waiting times for the start-up cycle to be performed depend on the material used to make the screed. Any adhesive for use on a heated screed must be an improved adhesion type (C2) and highly deformable (S2), as per European standard EN 12004.

- **Concrete**

The concrete must be suitably set (at least 3 months old). The floor slab must have a deflection of below 1/360 of the total span. The concrete should have no crumbling parts or surface treatments which could affect grip (anti-evaporation agents, old adhesive, resins, release agents, etc.). To ensure your tiling a long life, you must also make sure that on-ground floor slabs are properly insulated in order to prevent rising damp problems.

- **Screeds made with special binders or pre-blended mortar**

The waiting period before laying thin porcelain stoneware tiles can be greatly reduced by using special binders or premixed mortars which can be either of the normal-setting and fast-drying kind, or of the fast-setting and fast-drying kind. Using ready-mixed mortars provides, in particular, greater guarantees in terms of quality of the aggregates, as well as fewer opportunities for dosage errors, and an ideal solution when finding and storing the raw materials proves difficult.

- **Pre-existing floors**

In order to lay on top of existing ceramic flooring, or terrazzo or natural stone tiling, these surfaces must be solid, well anchored to the subfloor, crack-free, and clean deep down (remove oil, wax, or grease with water and caustic soda or special dewaxers). All traces of old paint must be removed, as must any lead coating on marble. Alternatively, specific primers can be applied (after removing any residues) which will provide a perfect grip between the old flooring or pavement and the new tiling. If some tiles are cracked or not properly anchored, they must be removed and the gaps repaired using suitable levelling products (e.g. ADESILEX P4, NIVORAPID, or PLANITOP FAST 330 MAPEI, H40 NO LIMITS - used as a smoothing coat -, Kerakoll, or K15 Ardex).

- **Anhydrite screeds**

These screeds must be sanded, dusted and primed before laying; they also must be perfectly dry. Permitted moisture content is 0.5%. In any case, always follow the instructions given by the anhydrite screed manufacturer.

- **Schlüter ditra sound matting**

Function: Schlüter®-DITRA 25 is a polyethylene membrane with a dovetail square grid structure, which is fleece-lined on the back to facilitate anchorage to the underlying adhesive. It also provides good bonding with just a thin layer of adhesive. Schlüter®-DITRA 25 offers load resistance and immediate walkability for all subsequent work to lay the ceramic tiles.

Laying ceramic tiles on unstable subfloors:

- **System separating the ceramic and the subfloor's surface. Absorbs tensions in various directions.**

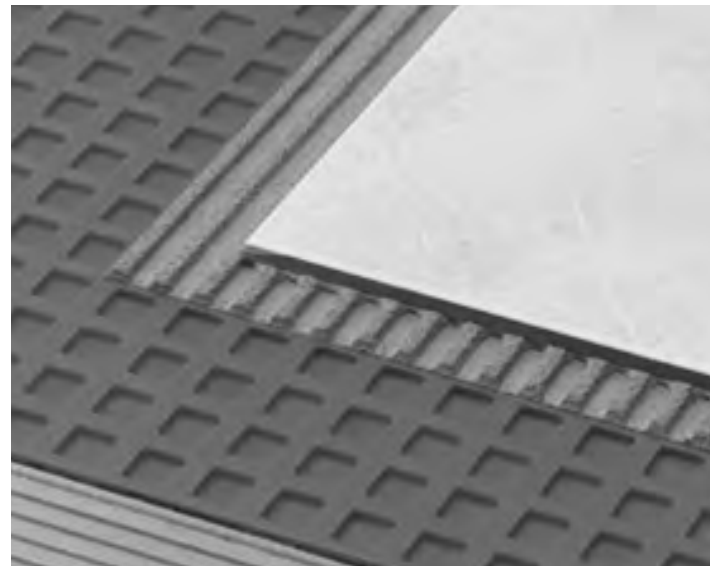
The channels between the shaped squares allow a uniform offsetting of the tension between the subfloor and the tiling, in all directions.

- **Waterproofing system for tiling and reliable seals.**

Schlüter®-DITRA 25 is a waterproof polyethylene membrane.

- **Pressure outlet for the water vapour in the channels offsets vapour tension.**

The channels on the back of Schlüter®-DITRA 25, between the shaped squares, create interlinked spaces which allow the pressure of the water vapour to be offset if the subfloor is damp.



04.3_walls: guidelines for different types of plaster or render

- **Concrete walls**

The concrete must be sufficiently set (at least three months in normal temperature conditions). The concrete should have no laitance or surface treatments which could affect bonding (release agents, anti-evaporation agents, old paint, etc.).

- **Cement-based render**

This kind of surface must be sufficiently set; if premixed products are used, follow the manufacturer's technical notes. In any case, when laying outdoors, the tear resistance characteristics of a cement-based render must be at least 1 N/mm².

- **Plaster/gypsum renders**

Gypsum bases must be perfectly dry (no more than 0.5% residual moisture) and also sufficiently solid and dust-free; it is essential to prepare them with the appropriate primer and only lay once the base is perfectly dry. This kind of laying is only acceptable indoors.

- **Foam concrete block wall**

Given the wide variety of products on the market, you will need to contact the manufacturers to find out the characteristics and suitability. Thin porcelain stoneware tiles can be laid on this kind of base indoors only, after application of a primer. For laying outdoors, you will need to add a layer of render reinforced with galvanised wire mesh. In the event that the tiles are to be laid on particularly deformable bases, such as metal and wooden surfaces, each situation should be considered individually, contacting the adhesive manufacturer's technical assistance department.

04.4_laying, sealing and filling: laying indoors

When laying thin porcelain stoneware slabs, careful attention must be given to the choice of adhesives in order to guarantee perfect grip over time, to prevent deformation, and to ensure the utmost reliability in all laying conditions (walls, floors, indoors, outdoors). Here are some basic guidelines which should be borne in mind when designing the tile laying and followed when fitting the materials.

- **Gaps**

When laying, leaving gaps measuring at least 2-3 mm - as required by the various laying standards (UNI 11493 in Italy) - is of vital importance, because it reduces the modulus of elasticity considerably, and therefore the rigidity of the tiling layer. Jointed tiling can accommodate the difference in movement between the support and the tiling, caused by settling of the structures, thermal expansion, etc., thereby avoiding dangerous tensions and consequent debonding and breakage of the tiles.

- **Joints**

Creation of perimeter deformation joints and/or distribution joints every 25 m².

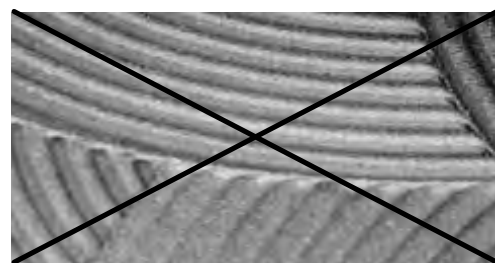
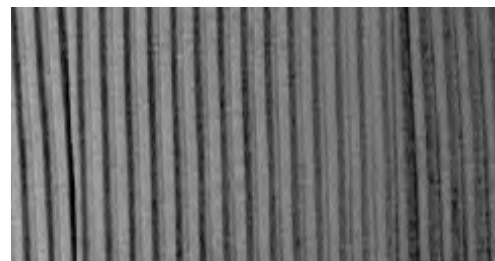
- **Adhesive application**

The double spreading method should be used in all applications, i.e. the adhesive must be applied in a straight line, parallel to the short side (for rectangular slabs), to both the slab and the subfloor or base. This method ensures 100% coverage of the slabs and removes air which would otherwise limit the bonding of the two layers.

For a more effective result, we recommend you:

A) use a 3/5 mm notched trowel to spread the adhesive over the slab and a 15 mm slant notch trowel to apply it to the subfloor or base;

B) match the adhesive direction when coupling (DO NOT CROSS DIRECTIONS).

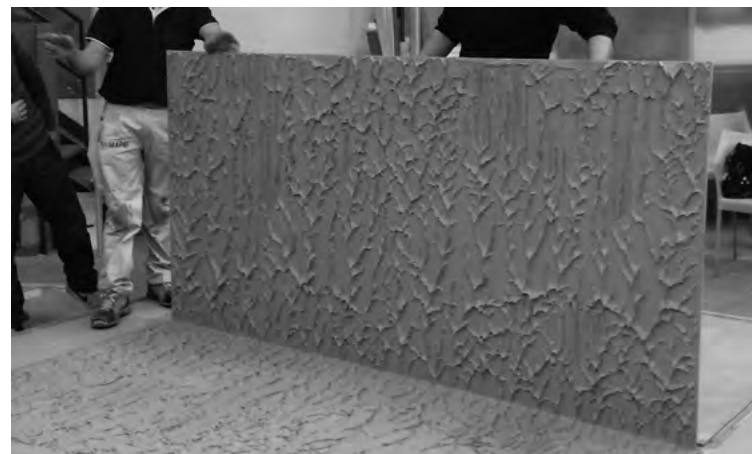


Apply the adhesive in straight lines, not curves

• Beating and adjustment

Vacuums and air bubbles under a tile can lead to damage. To improve bonding and allow trapped air out, you should use a plastic anti-bouncing beater (not a rubber mallet).

Start beating from the centre of the tile towards the outside, following the channels created when spreading the adhesive.



• Tile levelling systems

For better flooring/paving flatness, we recommend you use the levelling systems that can be used instead of normal spacers. These spacers are made up of bases and levelling devices that,

regardless of the type, help to keep the slabs aligned with one another.



• Choosing the adhesive

For the correct choice of adhesive, certain information is essential, such as the slab size, the base or subfloor onto which the tile will be laid, the intended use, etc. Bear in mind that the almost zero absorption rate of porcelain stoneware materials

means that class C2 adhesives (according to EN 12004) are required, as is good deformability, i.e. S1 class for medium-sized tiles (60x120 or 120x120 cm) or S2 for the large slabs (120x240 cm), as specified by EN 12004.

RECOMMENDED ADHESIVES			
MANUFACTURER	SLAB DIMENSIONS	NORMAL-SETTING	QUICK-SETTING
		CLASS ACCORDING TO EN 12004	CLASS ACCORDING TO EN 12004
MAPEI	> 5000 cm ²	C2TES1	C2FTS1 C2FS1
ARDEX		C2FE(E)S1	C2FE(E)S1
KERAKOLL		C2E C2TE	C2FTE
PCI		C2TES1	C2TES1
WEBER		C2TE C2TES2	C2FT

Fondovalle products meet the grip test provided for by **UNI EN 12004-2:2017 (determination of tensile adhesion strength for cementitious adhesive)**

laying on outdoor wall

• General rules

Laying 6.5 mm thick material on facades (as indeed laying most conventional clinker and conventional thickness porcelain stoneware tiles) requires proper design work prior to fitting. Here are some basic rules, which are included in the new UNI 11493 standard and which must be followed:

1. choice of an improved adhesive (C2), which is either deformable (S1) or highly deformable (S2) (as per EN 12004 specifications);
2. the double spreading technique must be used, as defined in UNI 11493, (see page 10). This technique is indispensable in order to prevent vacuums on the back of the slab and the stagnation of rainwater which could lead - in the event of severe frost - to tensions and the possibility of the slabs debonding. The double spreading technique is also necessary in order to better distribute the tensions that occur as a result of difference in movement between the tiling and the subfloor or base (for example, those caused by changes in temperature);

3. the slabs must be properly beaten (using a rubber trowel) to prevent air pockets forming between the back of the tile and the subfloor or base. This technique will also stop tensions forming as a result of water vapour caused by temperature changes;
4. especially in warm climates, and in adverse weather conditions (wind, etc.), we recommended the use of EN 12004 class "E" adhesives (extended open time). In any case, the tiles should be laid on the adhesive while it is still wet, according to the open time specified, so as to ensure adequate transfer of the adhesive to the back of the material;

5. laying during the winter period or in cold climates requires the use of EN 12004 class “F” fast-setting adhesives. These adhesives can finish setting and reach high bonding levels within just a few hours of application, which prevents night-time subzero temperatures causing the water used in the mixture freezing;
6. the tiles must be laid with a wide gap between them. The width of these joints should be calculated according to the climate locally, the size of the slabs, and the deformability of the base. Most internationally recognised standards state that laying without joints is not acceptable practice. The gap between the tiles is vitally important. These joints can be

- sealed using cement products, epoxy products, or ready-for-use polymeric products, which have lower elasto-mechanical properties than the tile so as to prevent high temperature changes leading to stresses which, in turn, cause debonding of the tile;
7. elastic expansion joints must be included (with a width of about 1 cm) at all corners, edges, and string courses. The surface area will need to be divided into a sections measuring a maximum of 9 – 12 sqm;
 8. any existing structural joints in the building must be strictly maintained in the laying design.

• **Grouts**

Before starting to grout the joints between the slabs, wait as stated below:

- 2-3 hours for laying with fast-setting adhesives;
- 24 hours for laying with normal-setting adhesives;

The joints between tiles can be grouted using UNI EN 13888 standard CG2WA class products.

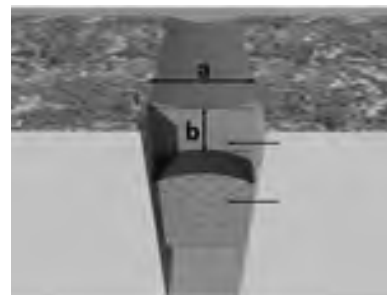
04.5_expansion and distribution joints

During laying, make sure you maintain all existing expansion joints on the subfloor and on the walls. If you are tiling very large areas, create expansion joints measuring about 1 cm, dividing up the area as follows:

- a) subfloors subject to movement or bending must be divided into squares measuring approx. 9-12 sqm;
- b) stable surfaces should have joints approximately every 16-25 m²;
- c) lay the slabs about 5 mm away from walls, columns, edges, corners, etc.

The sealant will not be able to perform its sealing function well and over time unless the joints are properly sized. As a rule, the tiles should be sealed as stated below:

a - JOINT WIDTH (mm)	b - JOINT DEPTH (mm)
from 0 to 4	Increase joint width
from 5 to 9	b = a
from 10 to 20	b = 10
from 21 to 40	b = 20
above 40	Reduce joint width



05_processing

cutting method

Here are some guidelines for the most common types of cut:

• **1. Dry-cutting with a cutting carriage**

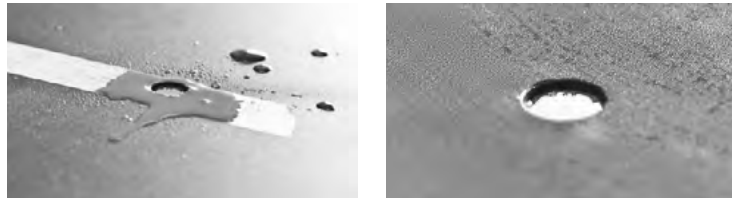


• **2. Dry-cutting with a cutting clamp**



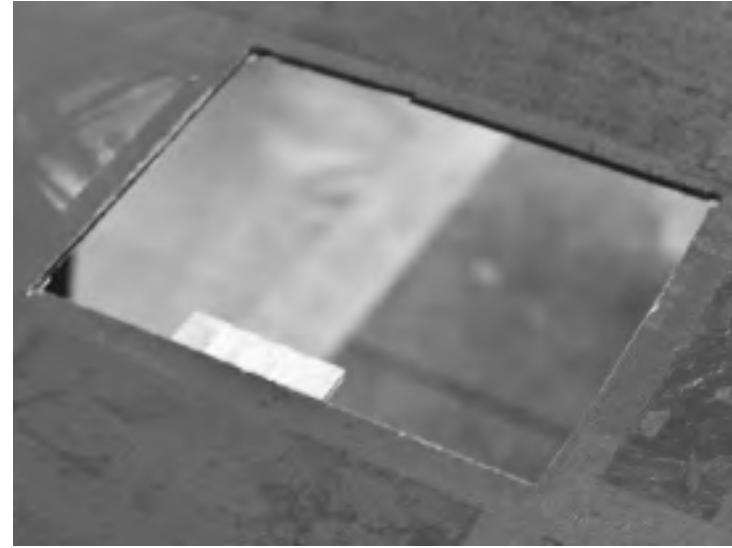
hole cutting with wet methods

• 1. Creating a single hole



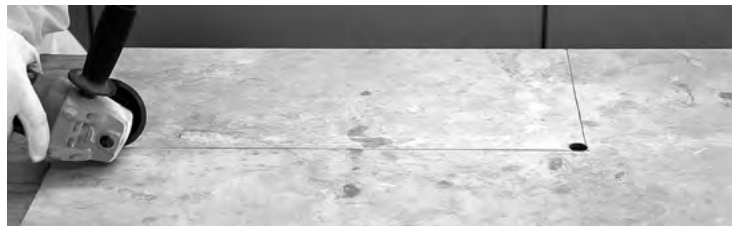
Use screwdrivers/drills with rpm ranging from 800 to 2500

• 2. CREATING A SQUARE CUTOUT



To avoid probable tile breakage, drill holes in the corners

• 3. Cutting with an angle grinder



finishing edges



06_recommended grout sealant



For the installation of Fondovalle products, we recommend you use the Mapei Ultracolor Plus grout line. This advice is based on the principle of matching the grout and tile colours using a tone-on-tone effect. Always remember to check the shades with your showroom, using the Mapei grout colour samples for comparison with the chosen product. While this advice is based on our experience so far, bear in mind that these recommendations must still be confirmed by further practical applications; therefore, anyone intending to use the product, is required to establish beforehand whether or not it is suitable for the use in question. In any case, the user is entirely responsible for any issues which may arise from its use.

Ultracolor Plus is a high-performance CG2WA class (EN 13888) cement mortar for grouting joints measuring from 2 to 20 mm; it is non-irritating, polymer-modified, quick-setting and drying, water-repellent and mouldproof, non-shrinking, not prone to cracks or fissures.

The tiled surface will be abrasion-resistant, smooth and compact, with low water absorption, easy to clean and will prevent the formation of mould and algae. The colours will be even and stain-free as the product is not prone to blooming.

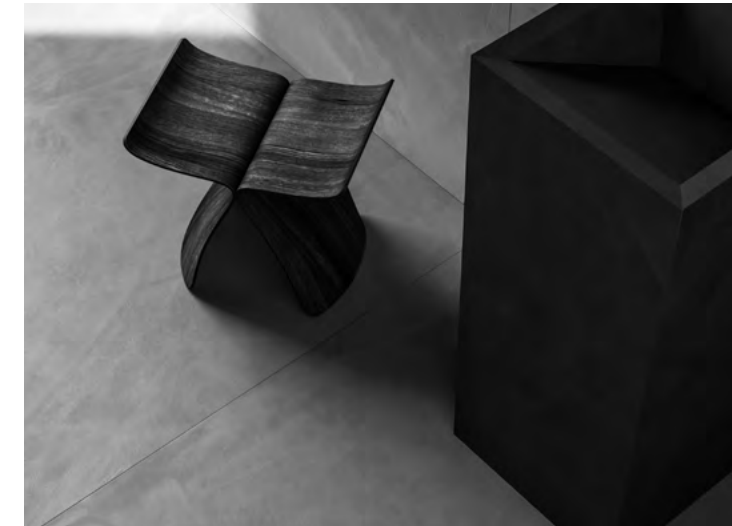
Walkability will be guaranteed after about 3 hours and the area can be used after 24 hours (48 hours for swimming pools).

Ultracolor Plus mortar is a mixture of special hydraulic binders, aggregates with a calibrated grain size, special polymers, hydrophobic additives, organic molecules and pigments. In Ultracolor Plus, the Ultracolor technology is based on a special self-hydrating hydraulic binder that guarantees a perfectly even colour through the application of two innovative technologies, originating from MAPEI research, namely BioBlock® and DropEffect®.

BioBlock® technology consists of special organic molecules which, distributed evenly through the microstructure of the joint, prevent the formation of the micro-organisms responsible for changes caused by mould or mildew. DropEffect® technology creates a synergistic effect to reduce absorption of surface water.

Ultracolor Plus can be used for grouting indoors and out, with all kinds of ceramic floor and wall tiles in residential and business settings.

For further information, warnings, and application methods, always refer to the latest updated version of the Ultracolor Plus technical data sheet, which is available on the website (www.mapei.com).



07_cleaning tips

Here are some tips for cleaning and maintaining the porcelain stoneware materials of **Ceramica Fondovalle S.p.A.**

Ceramica Fondovalle S.p.A. materials do not require special care and maintenance. Thanks to their surface compactness free from porosity and their resistance to chemicals, they lend themselves to being used in different residential and commercial contexts as cladding, both indoors and outdoors.

Ceramica Fondovalle S.p.A. reminds you that the initial cleaning of the tiling after installation is one of the activities that should normally be performed by the installer as required by the installation standard (UNI EN 11493-2016).

Cleaning must cover the entire surface of the tiling and therefore of the tiles, joints and expansion joints. The cleaning process will be considered correctly performed if the following two conditions are met: complete removal of all the residues of laying material, no damage (result of chemical attack or mechanical abrasion) to the tiling in its entirety and to the individual constituents (grouts and joints). The following tips are only indicative and informative. **Ceramica Fondovalle S.p.a.** supplies **long-lasting, resistant ceramic materials of excellence**. For instructions for their cleaning, maintenance and care, please refer to **FILA** (also for any special treatments), which will provide you with all the technical products and information needed for the future file of the product.

1. Initial cleaning

Before the handover of the premises to the client or commissioning of the flooring, it is necessary to perform initial cleaning. This is aimed at removing any dirt that has accumulated during the site activities and in particular to remove cementitious or epoxy paint and protective residues. Attention: non- or inadequate initial cleaning can result in deterioration of the excellent stain resistance characteristics, worsening performance over time and making the activities of ordinary maintenance more complex.

1.1. Removal of cement or sealant residues

For these types of contaminants the initial cleaning must be performed with detergents suitable for removing cement residues. As such, acid-based detergents" (pH <1), such as **DETERDEK PRO** by the company Fila, or equivalent substances (**SOLVACID – Geal**; **KERANET – Mapei**; **FLOOR CLEANER- Faber Chimica**, etc.) should be used. Cleaning after laying is to be performed when the sealant has completely hardened following the instructions provided in the technical data sheet. Indicatively, the installer should follow the procedure outlined as follows:

- Sweep the floor well and then vacuum it; for wall tiles, clean the surface well with a damp cellulose sponge.
- Use a diluted acid cleaner as recommended by the manufacturer;
- Distribute the solution evenly with the detergent diluted, using:
 - For residential spaces: for floors, a normal long-handled cleaning brush or a single-disc cleaner, for wall tiles, a spray.
 - For large environments, a single-disc machine with pad of suitable roughness.
- Leave to act according to the quantity of material present.

- Rinse the floor, passivate, and wipe up or vacuum the remaining liquid; use a damp sponge trowel for wall tiles.

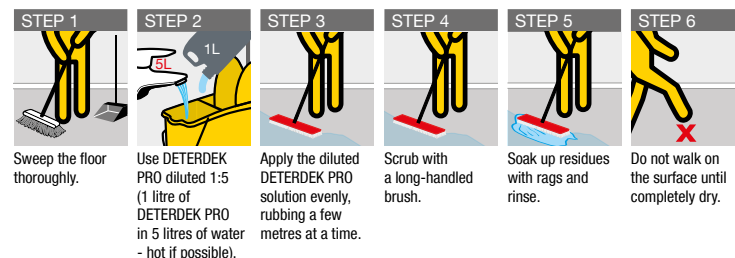
For further information on the use of detergents, read the instructions on the label and in the manufacturer's data sheet.

HOW IS IT USED?

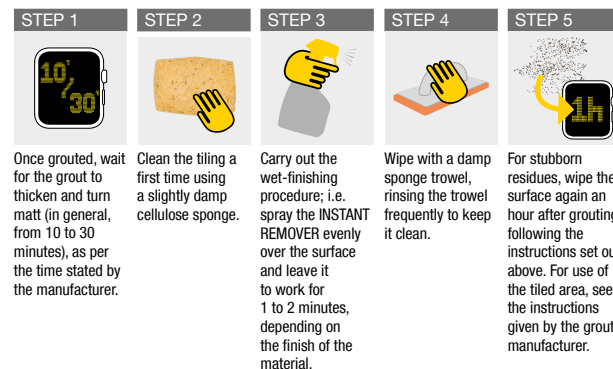
MACHINE CLEANING INSTRUCTIONS



INSTRUCTIONS FOR FINISHING FLOOR TILES MANUALLY



INSTRUCTIONS FOR FINISHING WALL TILES MANUALLY



Important: for more stubborn dirt, repeat the application with the same procedure, leaving the product to act for longer. Do not use on polished marbles or any materials vulnerable to attack by acids. Perform a preliminary test on a small portion of the surface to check that the material is resistant to the product.

1.2. Removal of epoxy-based residues

For these materials, the installer is required to follow the instructions and recommendations supplied by the manufacturer and the technical and design specifications indicated by the standard on installation (UNI EN 11493-2016). It is advisable to perform the **initial cleaning** with specific **professional detergents such as: CR10** by the company Fila (or equivalent: **EPOSOLV** by the company Geal) or referring to other specifications suggested by the sealant manufacturer.

2. Cleaning at the end of the site work

At the end of the site works, after the **initial cleaning**, careful removal of all other contaminants and of any dirt generated from other work on site (electricians, painters, painters etc.) is required. We recommend that you place protective sheeting over the floor or wall to prevent mechanical damage which could be caused by the presence of hard or abrasive substances.

3. Ordinary maintenance of the tiling

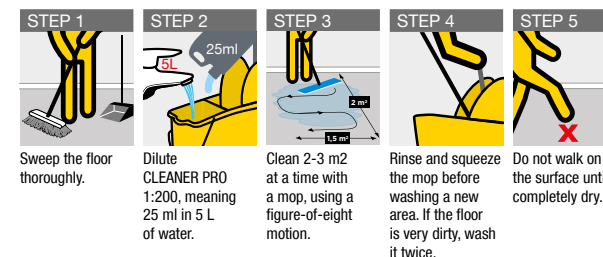
For everyday cleaning, **Ceramica Fondovalle S.p.A.** recommends the use of specific detergents for low-residue ceramics, following the manufacturer's recommendations. Remember that the problem of the formation of films and smears on **all types of surfaces** is due to not having removed ordinary dirt. Dirt must always be **removed and not spread around**.

HOW IS IT USED?

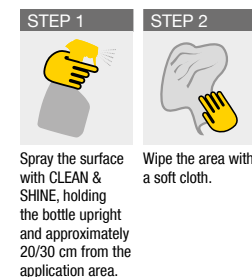
MACHINE CLEANING INSTRUCTIONS



INSTRUCTIONS FOR FINISHING FLOOR TILES MANUALLY



INSTRUCTIONS FOR FINISHING WALL TILES, KITCHEN OR BATHROOM COUNTERTOPS, AND TABLES MANUALLY



Important: for more stubborn dirt, repeat the application with the same procedure, leaving the product to act for longer. Do not use on polished marbles or any materials vulnerable to attack by acids. Perform a preliminary test on a small portion of the surface to check that the material is resistant to the product.

To facilitate this action, we indicate below the types of tools suitable for the different types of ceramic surfaces:

- for **SMOOTH** surfaces (normal, satin, glossy or sanded), **WET CLOTH** and/or **WET ANTI-SCRATCH SCOTCH-BRITE** (WHITE colours - preferably **LIGHT BLUE**);

- for **STRUCTURED** surfaces, **WET NON-ABRASIVE SPONGE** and/or **FINE BRISTLE BRUSH** IN **SORGHUM** OR **PLASTIC**;

The **CLOTH** and the **SPONGE** are more suited for finer, more liquid types of dirt, the **SCOTCH-BRITE ANTI-SCRATCH** and the **BRUSH** for coarser, more material dirt.

None of the above tools cause damage to ceramic materials but are less effective if not used as indicated, even if they may still work. The cloths can also be microfibre which in some cases are especially advantageous due to the different mechanical action of this material, always in combination with the preventive chemical action. With this in mind, we also point out the possibility of using melamine (or "magic") sponges, paying particular attention to matt or glossy satin materials as, being slightly abrasive, they can alter the original appearance.

4. Extraordinary maintenance of the tiling

Sometimes it may be necessary to clean stains generated by accidental events that occur in the long life of the tiling. In most cases, using the right cleaning and maintenance product, the problem is resolved without damage and with ease.

Ceramica Fondovalle S.p.A. provides technical assistance for the cleaning of its entire product range through the **FILA** specialised service centre. Our customers' satisfaction matters to us, so we work with specialist partners who provide full geographical cover.

To request this service, call the dedicated service number provided by FILA (+39 049 946 73 00), specifying Fondovalle, or visit the website: www.filasolutions.com



08_specifications

Porcelain stoneware flooring/paving/wall tiles by Ceramica Fondovalle.

1. product features and process characteristics

The material must be produced with top-quality clays sintered at 1250 °C and made of a compact, frost-proof, non-absorbent mixture which is also resistant to chemical and physical damage.

2. regulatory compliance

Materials in the Bla group must meet the highest technical standards provided for by European standard EN14411 and international standard ISO 13001, Annex G. and ensure compliance with DIN 51094 (lightfastness).

- EN ISO 10545.2 dimensional tolerances and surface quality
- EN ISO 10545.3 water absorption
- EN ISO 10545.6 resistance to deep abrasion
- EN ISO 10545.8 linear thermal expansion coefficient
- EN ISO 10545.9 thermal shock resistance
- EN ISO 10545.13 chemical resistance
- EN ISO 10545.12 frost resistance
- EN ISO 10545.14 stain resistance

We ensure these requirements are always met through our internal quality management system and strict technical testing conducted both internally and externally, at leading accredited laboratories. Here at Ceramica Fondovalle, we strive to constantly reduce wastage of resources, decrease our environmental impact, and improve continuously, and therefore we are equipped with the best and the latest technologies to ensure lower natural gas consumption and emissions.

3. trade description of the product

THE COMPANY	Ceramica Fondovalle SpA
COLLECTION	6.5 mm porcelain stoneware slabs
PRODUCT	Series name ...
SIZES	160x320 - 120x278 - 120x120 - 60x120 - 24x240 - 40x240 ...
THICKNESSES	6,5 mm - 10 mm
WEIGHT	15,5 kg/mq - 23 kg/mq
FINISH	Natural - Matt - Glossy ...

09_useful addresses

laying equipment

- **Raimondi S.p.A**
Via dei Tipografi, 11 - 41122 Modena (MO) - Italy
tel +39 059 280 888 - fax +(39) 059 282808
e-mail: raiutens@raimondiutensili.it
- **Brevetti Montolit S.p.A.**
Via Turconi, 25 - 21050 Cantello (VA) - Italy
tel +39 0332 419211 / 41774
e-mail: Info@montolit.com
- **Sigma di E. Ambrogiani & C. S.n.c.**
Via A. Gagliani, 4 - 47813 Igea Marina Bellaria (RN) - Italy
tel +39 0541 330103 - fax +39 0541 330422
e-mail: info@sigmaitalia.com
skype: sigma.ambrogiani
- **European Tile Masters Inc.**
27 Copper Ridge Rd - Trout Creek, MT 59874 - USA
tel +1 954 917 3599 - fax +1 954 917 3539
e-mail: info@europeantilemasters.com
- **MLTS Europa Srl.**
Via Tinelli, 55 - 54100 Massa (MS) - Italy
tel +39 0585 834383 - fax +39 0585 834470
e-mail: info@mltsystem.it
- **WEBER**
Saint-Gobain PPC Italia S.p.A.
Via Sacco e Vanzetti, 54 - 41042 Fiorano Modenese (MO) - Italy
tel +39 0536 837111
email: info@e-weber.it
- **PCI Bauprodukte AG**
Piccardstrasse 11 D - 86159 Augsburg
tel +49 821/5901.0 - fax +49 821/5901.372
e-mail: pci-infobasf.com
- **Laticrete S.r.l.**
Piazza Martiri, 7 - 19020 Brugnato (SP) - Italy
tel +39 0187 897470 - fax +39 0187 896881
email: info@laticrete.it
- **Ardex S.r.l.**
Via Alessandro Volta, 73 (Località Pigna) -
25015 Desenzano del Garda - Italy
tel +39 0309 119952

detergents

- **FILA Industria Chimica S.p.A**
Via Garibaldi, 58 - 35018 S. Martino dei Lupari (PD) - Italy
tel +39 049 9467300
- **GEAL S.r.l.**
Via Settola, 121 - 51031 Agliana (PT) - Italy
tel. +39 0574 750365
e-mail: info@geal-chim.it
- **LITHOFIN AG**
Heinrich-Otto-Straße 36 - 73240 Wendlingen am Neckar
Deutschland
tel +49 7024 94030
e-mail: info@lithofin.de

profiles and trim pieces














- **Schlüter-Systems**
KG - 7 - D-58640 Iserlohn
tel +49 2371 971-261 - fax: +49 2371 971-112
e-mail: info@schlueter.de
- **Schlüter-Systems Italia S.r.l.**
Via Bucciardi 31/33 - 41042 Fiorano Modenese (Mo) - Italy
tel +39 0536 914511 - fax: +39 0536 911156
e-mail: info@schlueter.it

adhesives for laying large sizes














- **MAPEI S.p.A. Italia**
Via Carlo Caffero, 22 - 20158 Milano - Italy
tel 02 376731 - fax 02 37673214
e-mail: mapei@mapei.it
- **KERAKOLL S.p.A Italy**
Via dell'Artigianato, 9 - 41049 Sassuolo (MO) - Italy
tel +39 0536 816 511 - fax +39 0536 816 581
e-mail: info@kerakoll.com

10_caratteristiche tecniche

Porcelain stoneware slabs - Gruppo Bla UGL (UNI EN 14411_G)

	Test method	Required value	Results		Valutation	
			L < 120 cm	≥ 120 cm		
 Length and width	UNI EN ISO 10545-2	± 0,6% ± 2 mm	± 0,6% ± 0,5 mm	± 0,6% ± 0,9 mm	Compliant	
		Thickness	± 5% ± 0,5 mm	± 5% ± 0,5 mm	± 3% ± 0,5 mm	Compliant
		Edge straightness	± 0,5% ± 1,5 mm	± 0,5% ± 1,5 mm	± 0,5% ± 1,5 mm	Compliant
		Rectangularity	± 0,5% ± 2 mm	± 0,5 % ± 1 mm	± 0,5 % ± 2 mm	Compliant
		Planarity	± 0,5% ± 2 mm	± 0,5 % ± 2 mm	± 0,5 % ± 2 mm	Compliant
		Surface quality	≥ 95%	Compliant	Compliant	Compliant
 Water Absorption	UNI EN ISO 10545-3	≤ 0,5%	≤ 0,1%		Compliant	
 Bending strength	UNI EN ISO 10545-4	Modulus of rupture R average ≥ 35 N/mm ² R min ≥ 32 N/mm ²	R ≥ 50 N/mm ²		Compliant	
		Breaking strength h ≥ 7,5 mm; S > 1300 N h < 7,5 mm; S > 700 N	S > 700 N		Compliant	
 Deep abrasion resistance	UNI EN ISO 10545-6	≤ 175 mm ³	V ≤ 130 mm ³		Compliant	
 Resistance to thermal shock	UNI EN ISO 10545-9	Resistant	Resistant		Compliant	
 Frost resistance	UNI EN ISO 10545-12	Resistant	Frost proof		Compliant	
 Chemical resistance High- and low-concentration acids and bases	UNI EN ISO 10545-13	Declared values	A; LA; HA		Compliant	
		B minimum	A; LB; HB Honed, Glossy			
 Stain resistance	UNI EN ISO 10545-14	Minimum Class 3	Declared values		Compliant	
 Colour resistance to light exposure	DIN 51094	Resistant	Resistant		Compliant	
 Slip resistance with bare feet	DIN EN 16165_A	From A to C	See collection		Compliant	
 Slip resistance with shod feet	DIN EN 16165_B	From R9 to R13	See collection		Compliant	
 Skid resistance DCOF	ANSI A 137.1:2012	> 0,42 wet	> 0,42 wet		Compliant	
	BCRA	> 0,40 dry leather > 0,40 wet rubber	> 0,40 dry > 0,40 wet		Compliant	
	BS EN 16165_C	on request ≥ 36	See collection		Compliant	
 Skid resistance PENDULUM	AS 4586	on request P3	See collection		Compliant	
	UNE-ENV 12633	on request Class 2	See collection		Compliant	
	UNI EN 13501-1	Resistant	Resistant A1 FL		Compliant	

Porcelain stoneware slabs - Gruppo Bla GL (UNI EN 14411_G)

	Test method	Required value	Results		Valutation	
			L < 120 cm	≥ 120 cm		
 Length and width	UNI EN ISO 10545-2	± 0,6% ± 2 mm	± 0,6% ± 0,5 mm	± 0,6% ± 0,9 mm	Compliant	
		Thickness	± 5% ± 0,5 mm	± 5% ± 0,5 mm	± 3% ± 0,5 mm	Compliant
		Edge straightness	± 0,5% ± 2 mm	± 0,5% ± 2 mm	± 0,5% ± 2 mm	Compliant
		Rectangularity	± 0,5% ± 2 mm	± 0,5% ± 1 mm	± 0,5% ± 2 mm	Compliant
		Planarity	± 0,5% ± 2 mm	± 0,5 % ± 2 mm	± 0,5 % ± 2 mm	Compliant
		Surface quality	≥ 95%	Compliant	Compliant	Compliant
 Water Absorption	UNI EN ISO 10545-3	≤ 0,5%	≤ 0,1%		Compliant	
 Bending strength	UNI EN ISO 10545-4	Modulus of rupture R average ≥ 35 N/mm ² R min ≥ 32 N/mm ²	R ≥ 50 N/mm ²		Compliant	
		Breaking strength h ≥ 7,5 mm; S > 1300 N h < 7,5 mm; S > 700 N	S > 700 N		Compliant	
 Deep abrasion resistance	UNI EN ISO 10545-6	1 - 5	Compliant		Compliant	
 Resistance to thermal shock	UNI EN ISO 10545-9	Resistant	Resistant		Compliant	
 Frost resistance	UNI EN ISO 10545-12	Resistant	Frost proof		Compliant	
 Chemical resistance High- and low-concentration acids and bases	UNI EN ISO 10545-13	Declared values	A; LA; HA		Compliant	
		B minimo				
 Stain resistance	UNI EN ISO 10545-14	Minimum Class 3	Declared values		Compliant	
 Colour resistance to light exposure	DIN 51094	Resistant	Resistant		Compliant	
 Slip resistance with bare feet	DIN EN 16165_A	From A to C	See collection		Compliant	
 Slip resistance with shod feet	DIN EN 16165_B	From R9 to R13	See collection		Compliant	
 Skid resistance DCOF	ANSI A 137.1:2012	> 0,42 wet	> 0,42 wet		Compliant	
	BCRA	> 0,40 dry leather > 0,40 wet rubber	> 0,40 dry > 0,40 wet		Compliant	
	BS EN 16165_C	on request ≥ 36	See collection		Compliant	
 Skid resistance PENDULUM	AS 4586	on request P3	See collection		Compliant	
	UNE-ENV 12633	on request Class 2	See collection		Compliant	
	UNI EN 13501-1	Resistant	Resistant A1 F		Compliant	



Ceramics of Italy

AD: Marketing Dept.

07/2023

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Ceramica Fondovalle S.p.A.

Via Rio Piodo, 12
41053 Torre Maina, (MO) Italy
T. +39 0536 934211
F. +39 0536 934250
www.fondovalle.it

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