



**Technical
Instructions**

The information presented in this manual should be treated as suggested guidelines only. Each individual distributor and/or fabricator of Stratus slabs is responsible for determining the appropriate handling, fabrication and installation methods based on their individual experience, knowledge and equipment as well as the requirements of the specific project. It is recommended that all fabricators conduct preliminary tests before final cutting and fabrication to confirm the suitability of equipment and fabrication methods.

It is recommended to work in compliance with all local laws and regulations regarding the safe handling and fabrication of porcelain slabs. Emilgroup recommends wet cutting of slabs to minimize exposure to silica dust.

All illustrations provide product handling and processing guidance and are purely indicative. All rights are reserved.

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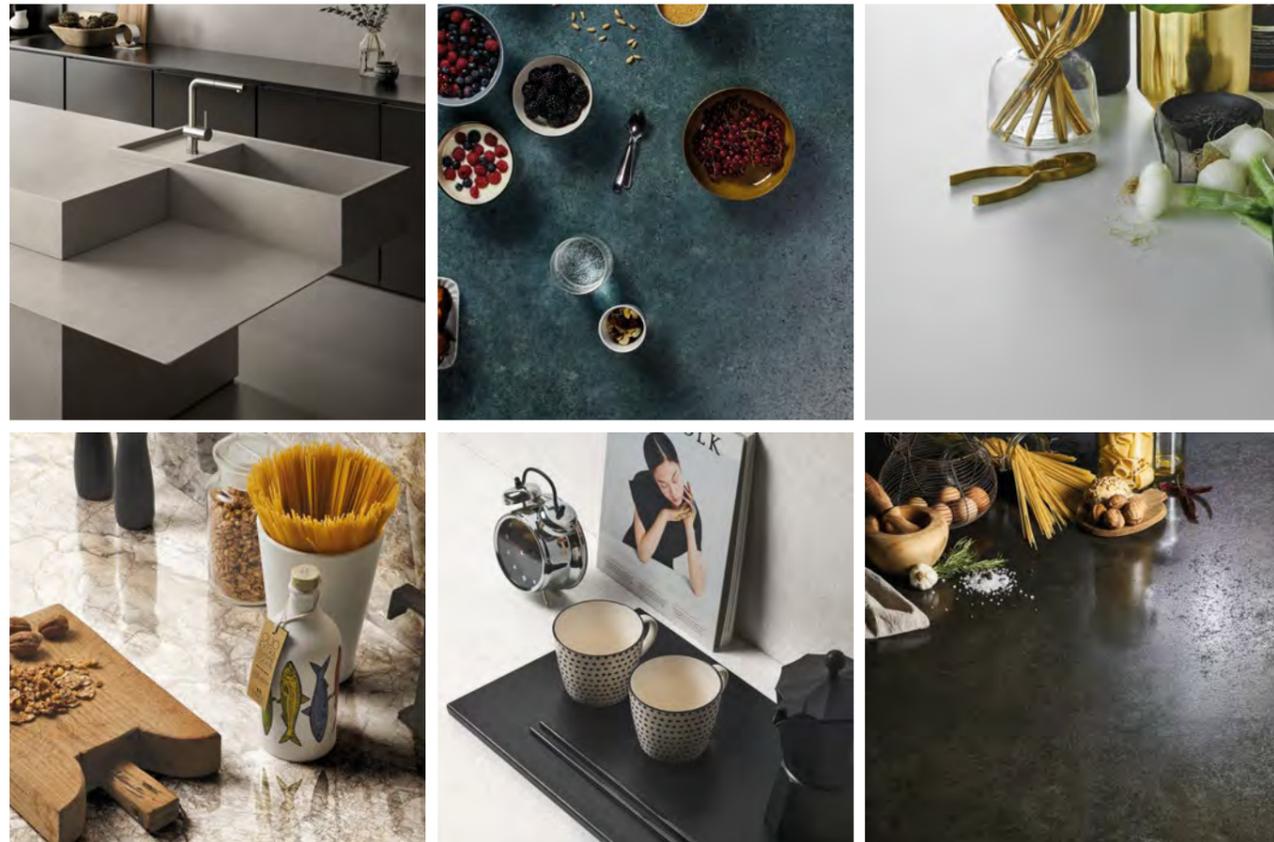
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THE BEAUTY OF LARGE SURFACES AND THE OUTSTANDING PERFORMANCES OF STONEWARE

Emilceramica, known worldwide for ceramic excellence, has drawn on over a decade of experience to create Stratus, a collection of ceramic slabs in the 160x320 cm size, of various thickness, for creating furnishings and continuous surfaces, combining the utmost aesthetic refinement with advantages in terms of hygiene, strength and practicality that only porcelain stoneware can guarantee. A project that delivers the utmost modularity and versatility to express the full potential of those who aspire, day after day, to transform material into attractive design.

INSPIRATIONS AND STYLISTIC VARIANTS

Countless inspirations for a range that guarantees the highest degree of freedom of expression and is the ideal medium for architectural design in step with the latest, most innovative trends.



SIZES AND THICKNESSES

/01

160x320 cm - thickness 6.5 mm
162x324 cm - thickness 12 mm



Slabs in both 6.5 mm and 12 mm thicknesses can be supplied mesh-mounted.

PACKAGING CRATES AND A-FRAMES

/02

Slabs can be supplied and stored horizontal in special, made-to-measure **wooden crates**. Otherwise, slabs can be packed vertical on **A-frames**, also in wood and made-to-measure, specially designed for shipment in containers.

The recommendations below apply to slabs in both 6.5 mm and 12 mm thicknesses.

PACKAGING IN CRATES

For orders for two or more articles in the same size - or even different sizes - slabs are placed **in a single crate**, until full. Crates should be shipped filled to capacity and with the slabs secured in place by suitable protective systems.



SLABS 160x320 cm - thickness 6.5 mm

Wooden crate (Single pieces)

Dimensions cm	Slab m ²	Slab kg	Slab Lbs	Slab kg/m ²	Slab Lbs/m ²	Slabs per crate	M ² per crate	Weight of full crate kg
175 x 345 x 38 h	5.12	81.92	180.60	16	35.27	14	71.68	1287

SLABS 162x324 cm - thickness 12 mm

Wooden crate (Single pieces)

Dimensions cm	Slab m ²	Slab kg	Slab Lbs	Slab kg/m ²	Slab Lbs/m ²	Slabs per crate	M ² per crate	Weight of full crate kg
175 x 345 x 38 h	5.2488	152	335.10	28.96	63.85	9	47.24	1508

PACKAGING IN A-FRAMES

For orders for two or more articles in the same size, slabs are placed **in the same A-frame**, until full. Placing of more than one size on a single A-frame is not recommended. A-frames should be shipped filled to capacity. A-frames are preferable to other forms of packaging if the material is to be stowed in and transported via a container.



SLABS 160x320 cm - thickness 6.5 mm

A-frame (Single pieces)

Dimensions cm	Slab m ²	Slab kg	Slab Lbs	Slab kg/m ²	Slab Lbs/m ²	Slabs per A-frame	M ² per A-frame	Weight of full A-frame kg
75 x 330 x 200 h	5.12	81.92	180.60	16	35.27	40	204.80	3497

SLABS 162x324 cm - thickness 12 mm

A-frame (Single pieces)

Dimensions cm	Slab m ²	Slab kg	Slab Lbs	Slab kg/m ²	Slab Lbs/m ²	Slabs per A-frame	M ² per A-frame	Weight of full A-frame kg
75 x 330 x 200 h	5.2488	152	335.10	28.96	63.85	20	104.98	3260

HANDLING PACKAGING

/03

CRATE HANDLING

Crates must be handled one at a time.

For storage, only if they are identical, they can be stacked in piles of up to 8 units.



(A)

Handling **crates by the long side:**

this is the recommended handling option. Crates must be handled using forks at least 1.2 m long, inserted in the holes provided for greater stability.



(B)

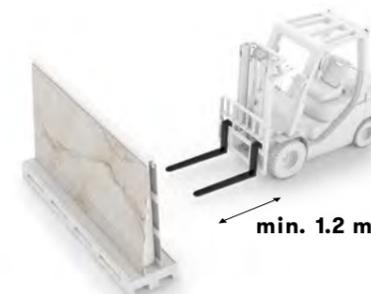
Handling **crates by the short side:**

this method must only be adopted for loading/unloading containers and forks at least 2.1 m long should be used.

The forklifts used must have a payload sufficient for loading and handling the weights detailed in the tables above.

HANDLING A-FRAMES

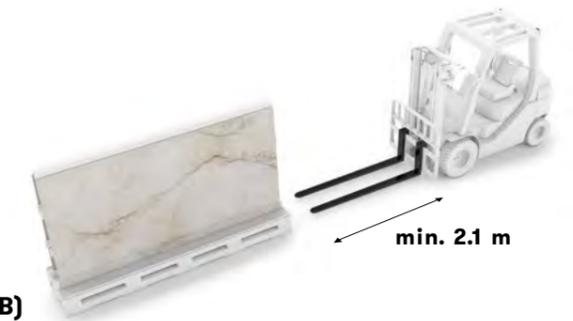
A-frames must be handled one at a time.



(A)

Handling **A-frames by the long side:**

this is the recommended handling option. A-frames must be handled using forks at least 1.2 m long, inserted in the holes provided for greater stability.



(B)

Handling **A-frames by the short side:**

this method must only be adopted for loading/unloading containers and forks at least 2.1 m long should be used.

The forklifts used must have a payload sufficient for loading and handling the weights detailed in the tables above.

MEANS OF TRANSPORT / LOADING

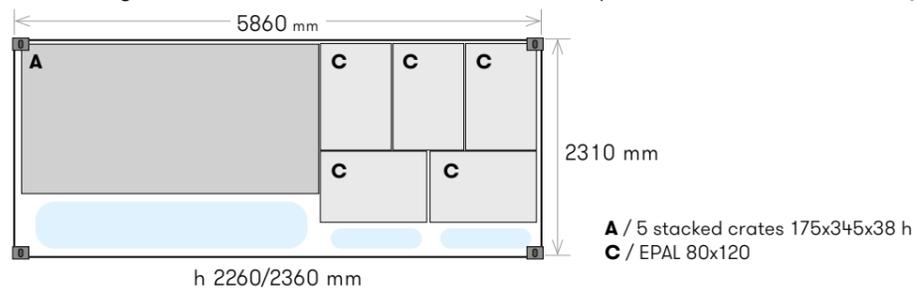
20' CONTAINER

Transport is permitted in accordance with the loading instructions provided below:



CRATES

When fully laden with **crates**, the container still has space for the addition of **5 e-pallets of 80x120**.

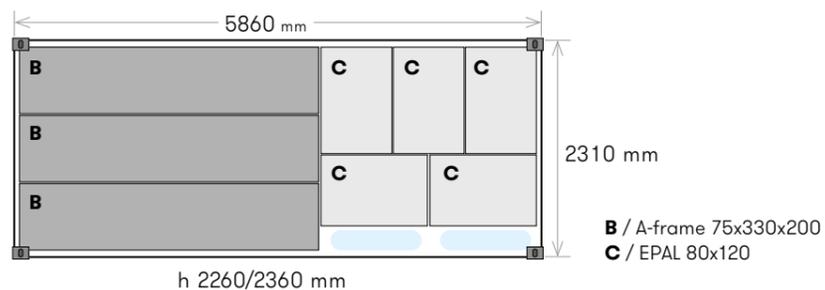


	CRATES	M ²	KG
6.5 mm	5	358.40	6,434.40
12 mm	5	236.20	7,540

CAUTION: Remember that the weight of the pallets has to be added to that of the crates. Take great care to balance the weights and check that the vehicle has sufficient payload for transporting all the weights loaded.

A-FRAMES

When fully laden with **A-frames**, the container still has space for the addition of **5 e-pallets of 80x120**.



	A-FRAMES	M ²	KG
6.5 mm	3	614.40	10,490.40
12 mm	3	314.93	9,780

CAUTION: Remember that the weight of the pallets has to be added to that of the A-frames. Take great care to balance the weights and check that the vehicle has sufficient payload for transporting all the weights loaded.

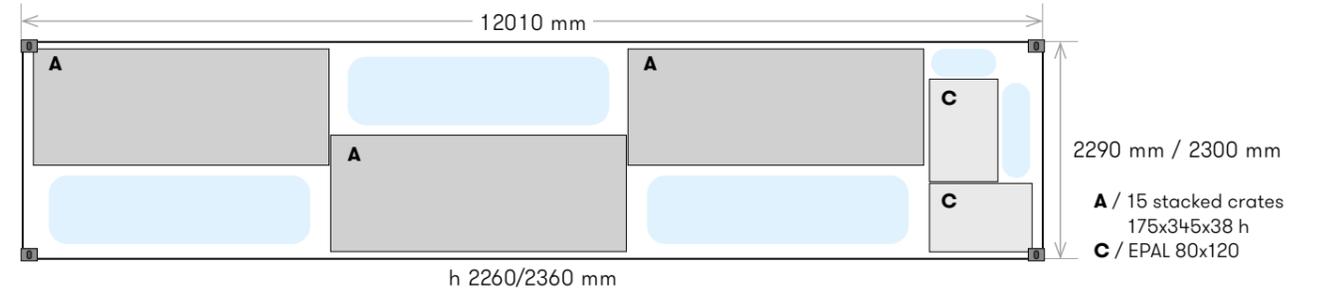
40' CONTAINER

Transport is permitted in accordance with the loading instructions provided below:



CRATES

When fully laden with **crates**, the container still has space for the addition of **2 e-pallets of 80x120**.

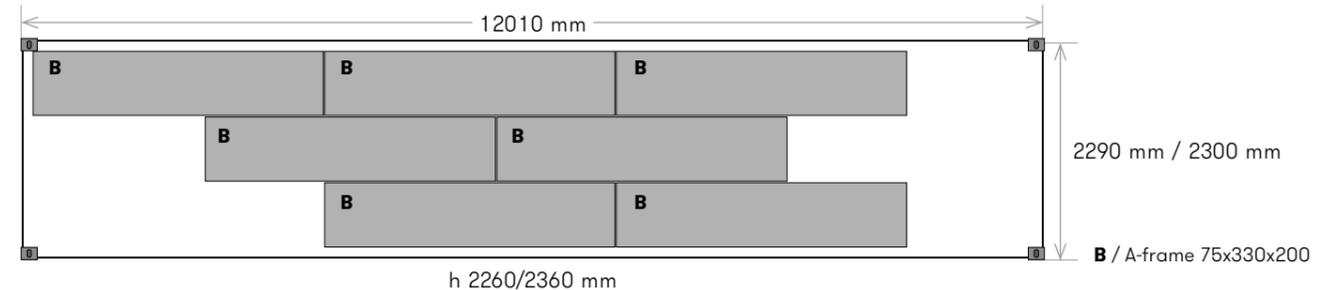


	CRATES	M ²	KG
6.5 mm	15	1,075.20	19,303.20
12 mm	15	708.59	22,620

CAUTION: Remember that the weight of the pallets has to be added to that of the crates. Take great care to balance the weights and check that the vehicle has sufficient payload for transporting all the weights loaded.

A-FRAMES

When fully laden with **A-frames**, the container still has space for the addition of **2 e-pallets of 80x120**.



	A-FRAMES	M ²	KG
6.5 mm	7	1,433.60	24,477.60
12 mm	7	734.83	22,820

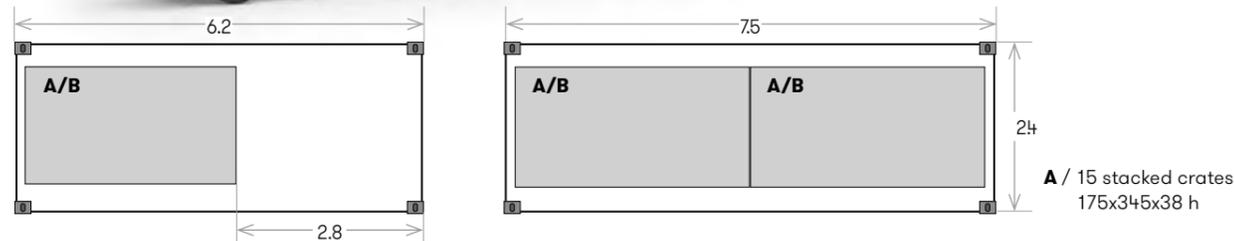
CAUTION: Remember that the weight of the pallets has to be added to that of the A-frames. Take great care to balance the weights and check that the vehicle has sufficient payload for transporting all the weights loaded.

MEANS OF TRANSPORT / LOADING

/04

TRUCKS WITH TRAILERS

Transport is permitted in accordance with the loading instructions provided below:



	CRATES	M ²	KG		A-FRAMES	M ²	KG
6.5 mm	15	1075.20	19,303.20	6.5 mm	3	614.40	10,490.40
12 mm	15	708.59	22,620	12 mm	3	314.93	9,780

Take great care to balance the weights and check that the vehicle has sufficient payload for transporting all the weights loaded.

ARTICULATED TRUCKS

Transport is permitted in accordance with the loading instructions provided below:



	CRATES	M ²	KG		A-FRAMES	M ²	KG
6.5 mm	15	1075.2	19,303.20	6.5 mm	3	614.40	10,490.40
12 mm	15	708.59	22,620	12 mm	3	314.93	9,780

Take great care to balance the weights and check that the vehicle has sufficient payload for transporting all the weights loaded.

SLAB HANDLING AND STORAGE

/05

To prevent the risk of breakage or chipping, slabs must be handled with the greatest care and attention, in full compliance with safety regulations and with their edges protected at all times. For all types of handling and storage, always check the payload of the loading, unloading and handling systems and ensure that the slabs are always perfectly balanced.

SIZE	160x320 cm / 6.5 mm 62 ^{15/16"} x125 ^{15/16"}	162x324 cm / 12 mm 63 ^{3/4"} x127 ^{9/16"}
Weight of single slab (kg)	81.92 kg	152 kg

HANDLING WITH MECHANICAL CLAMP of slabs 6.5 mm and 12 mm thick



Mechanical clamps are able to handle up to 2 slabs at a time.

This solution comprises a hydraulic system complete with a gantry crane, carrying a **double clamp** which grips the slabs in two points to prevent them from bending and breaking.

Before lifting, clean the slab contact points to ensure that they do not slip out of the clamp. Rubber fittings should also be placed in these points, so that the steel clamps do not touch the slabs.

If a double **clamp** is not available, a **single** one can be used, enlarging its contact point by inserting a strip of wood of 300x20x2 cm. This is necessary to rotation or twisting of the slab, which could cause it to break.

SLAB HANDLING AND STORAGE

HANDLING WITH SLINGS of slabs 6.5 mm and 12 mm thick

The ideal equipment for handling several slabs at a time is a gantry crane with slings, which must always be made of **canvas** and never metal, since the latter type might damage the slabs.



MANUAL HANDLING of slabs 6.5 mm and 12 mm thick

One slab at a time can be transported by hand. This must be done with the aid of a frame with a sufficient payload to support the weight of the slab, with adjustable suction cups which hold the slab in place so that it cannot bend. At least 2 people are required to handle a slab 6.5 mm thick. At least 4 people for a slab 12 mm thick.



SLAB SHAPING

The recommendations below apply to slabs in both 6.5 mm and 12 mm thicknesses.

Before any kind of shaping, slabs must be thoroughly cleaned and inspected to ensure they are free from marks, cracks, chipping or other manufacturing defects. While Stratus slabs do not experience major color variation, there may be some minor shade difference between slabs. Each slab is individually marked with the applicable shade number. Please confirm shade compatibility when using multiple slabs on a single project.

Any material claims must be made prior to any cutting, fabrication or installation. No material claims will be accepted for any reason once the product has been cut, fabricated, or installed.

After inspection and prior to additional fabrication, a 2 cm perimeter cut should be made around all four edges of the slab to reduce any internal stress tension inherent in the slab. For non-rectified 12 mm slabs, this perimeter cut will also ensure exact sizing and a clean edge prior to shaping.

For 6.5 mm slabs with no mesh backing, it is recommended to apply a 12 mm high density foam backer board prior to fabrication of sink holes or other cut outs. This will provide additional rigidity and strength during installation.

PERIMETER CUT on slabs 6.5 mm and 12 mm thick



CIRCULAR SAW CUTTING of slabs 6.5 mm and 12 mm thick



CUTTING PARAMETERS

Thickness	Cutting speed (m/min)	Saw Blade Ø (mm)	RPM
6.5 mm	1.5	300 - 350	2300 - 2600
12 mm	1.5	400	2000 - 2150

- Use a diamond saw blade suitable for cutting porcelain stoneware.
- Use a supporting surface large enough to hold the slab straight and flat.
- Make the perimeter destressing cut. Remove a minimum of 2 cm from all four sides of the slab.
- To make a recess for a sink, drill holes in all the inside corners with a drill bit of radius at least 6 mm, and then cut to join up the holes.
- Make the straight cuts needed to create a countertop of the correct size.
- Bevel the insides of the hole.
- The saw blade must rotate in the cutting direction.
- Cool the saw blade with a constant jet of water with the highest possible flow rate, directing it at the cutting zone.
- Halve the saw blade speed at the start and end of the cut.
- Cut at least 1.5 mm more than the thickness of the slab to obtain a clean cut.
- Cut at the minimum speed, and in automatic mode, if the saw blade falls straight onto the slab.
- Never create right-angled (90°) internal corners, L-shaped kitchen worktops with straight edges, straight-edge sink holes, or straight internal edges.
- For slabs 6.5 mm thick without mesh backing, before creating holes and recesses, a layer of high density foam backer board about 12 mm thick should be applied to the back.

SLAB SHAPING

WATERJET CUTTING of slabs 6.5 mm and 12 mm thick



CUTTING PARAMETERS

Thickness	Speed (m/min)	Pressure (bar)	Abrasive rate (kg/min)
6.5 mm	1.8	2800	0.35 / 0.40
12 mm	1	2800	0.4

- Use a supporting surface large enough to hold the slab straight and flat.
- Make the perimeter destressing cut. Remove a minimum of 2 cm from all four sides of the slab, taking care that the cut starts and ends outside the slab.
- Reduce the pressure at the start of the cut.
- When making subsequent cuts, make sure that corners have a radius of at least 6 mm.
- When creating recesses, start to cut at a point inside the recess and proceed out towards the perimeter of the cut
- For slabs 6.5 mm thick without mesh backing, before creating holes and recesses, a layer of high density foam backer board about 12 mm thick should be applied to the back.

NUMERICALLY CONTROLLED CUTTING of slabs 6.5 mm and 12 mm thick

- Use tools suitable for cutting porcelain stoneware, constantly cooled with water.
- Use a supporting surface large enough to hold the slab straight and flat.
- Make the perimeter destressing cut. Remove a minimum of 2 cm from all four sides of the slab.
- For slabs 6.5 mm thick without mesh backing, before creating holes and recesses, a layer of high density foam backer board about 12 mm thick should be applied to the back.



STEP 1 CORING BIT

- Make an initial hole for the recess with a coring bit, with minimal descent speed, especially at the start and end of the drilling process.
- Raise the core bit slightly before completing the hole to reduce the pressure inside it.
- Never remove more than 0.5 mm in the first two passes, or more than 2 mm in all subsequent passes.



STEP 2 CUTTER TOOLS

- Approach the cutting tool to the line of the cut with a curved trajectory, avoiding a perpendicular position as this may lead to chipping or crazing.
- When making subsequent cuts, make sure that corners have a radius of at least 6 mm.
- Halve the speed in the final part of the cut which completes the recess.
- Never lower the cutting tool straight onto the surface of the slab.
- Never use the oscillation function when using cutting tools, as this may create chipping.



STEP 3 DIAMOND GRINDING WHEELS

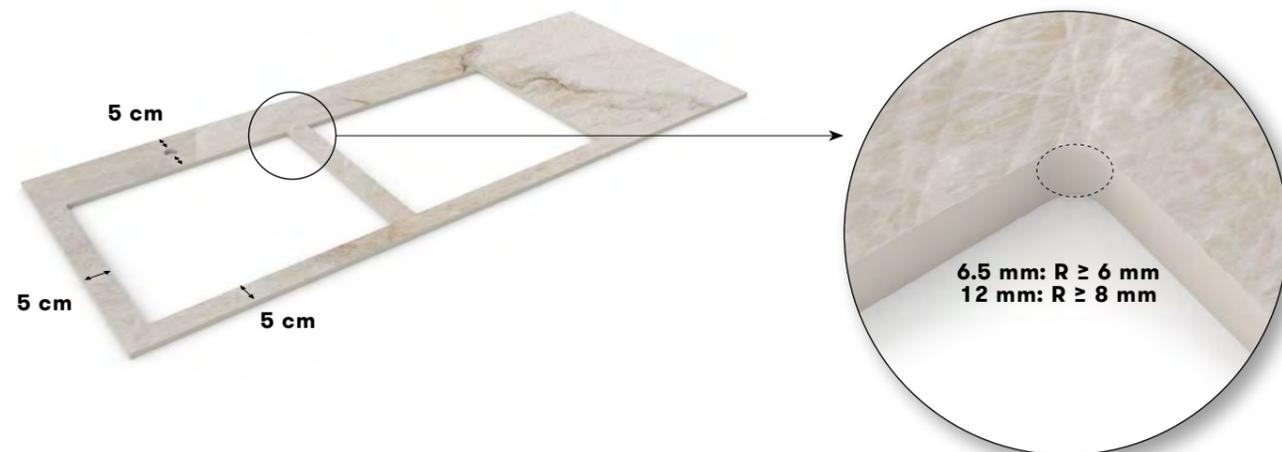
- When grinding inside edges, always start from a hole already made earlier.

CUTTING PARAMETERS

Tool	Thickness	RPM	Speed (mm/min)
Coring bit	6 - 12 mm	4500 - 5500	10
Cutting tool	6 - 12 mm	4500 - 5500	150
Diamond grinding wheels	6 - 12 mm	8000 - 10000	250

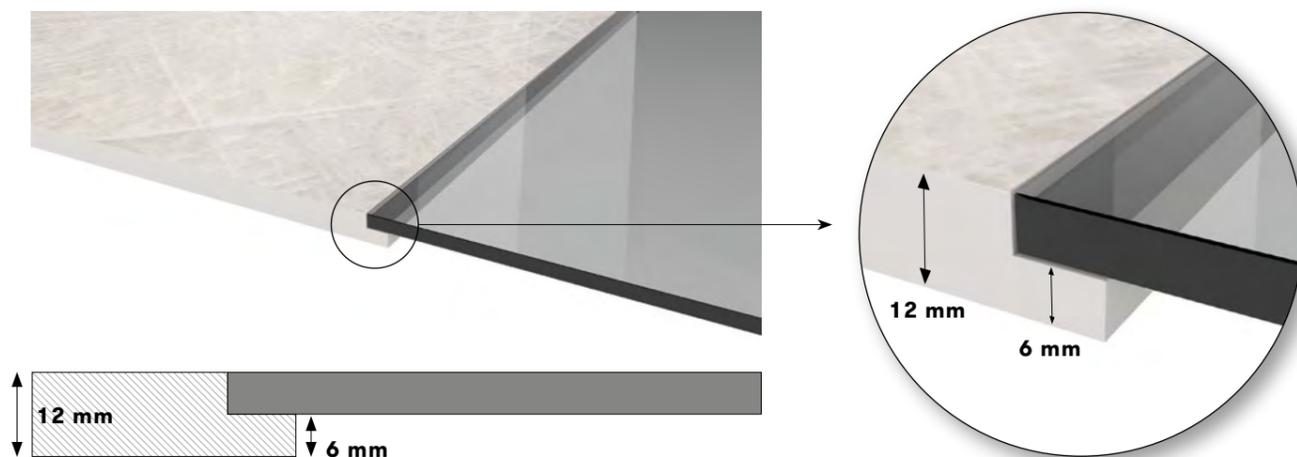
COUNTERTOP SHAPING

SINK AND/OR TAP HOLE in slabs 12 mm thick



- Leave at least 5 cm between holes and the edges of the destressed slab and between the edge of the sink hole and the tap hole.
- Never leave 90° corners and create a radius of at least 6 mm for the corners of holes in slabs of 6.5 mm and at least 8 mm in slabs of 12 mm.

FLUSH-MOUNTED SINKS / SINKS AND HOBS



- For fabricated sinks, the basic wooden structure should be built first, ready for waterproofing and then covered with the slabs.
- Recessed edges for flush-mounted sinks and hobs must only be created in 12 mm slabs, cutting to a depth of no more than 6 mm in the mounting zone.
- All sinks should be supported using a structure mounted to the cabinets. Sinks should not be supported directly by the porcelain countertop.
- For undermount sinks, exposed edges of the porcelain slab around the sink cut out should be finished with a rounded edge of at least 3 mm radius. Edges should also be treated with an appropriate porcelain sealer/enhancer. Recommended brands include Akemi and Tenax.

COUNTERTOP MANUFACTURING



- To create L-shaped tops, combine two rectangular pieces; do not create diagonal joints and avoid weight imbalances between the two parts of the countertop.
- When joining the edges of Stratus slabs use a color matched 2 part epoxy, polyurethane or other suitable adhesive. Follow all adhesive manufacturers instructions.



- A minimum 2 cm layer of plywood, backer board or other suitable substrate material should be applied to the base cabinets prior to installing the final countertop. This substrate also provides support for a 45° turn down edge detail.
- If working on existing stone or solid surface countertops, the slab can be applied directly to the existing surface.
- Once completed, countertops must be handled with the aid of specially created wooden cross-bars and crates, to ensure the maximum stability during transportation.



- Countertop overhangs cannot be created using 6.5 mm slabs or when using 12 mm slabs without mesh backing.
- Overhanging countertops must be created using mesh-mounted slabs of 12 mm, and the overhang must be no more than 30 cm wide.

EDGE FINISHING

STRAIGHT EDGES in slabs 12 mm thick

Full length shaped edges or glued apron edge profiles can be created by hand or using an edge polisher, CNC machine or other professional equipment. Regardless of the chosen method, always start by defining a straight or rounded bevel of at least 1 mm for the top corners of the profile obtained. 5-axis numerical control machines are required to program the beveling of curved corners.

Once machined, slab edges should be finished with an appropriate porcelain enhancer/sealer to maintain stain resistance. Recommended brands include Akemi and Tenax.

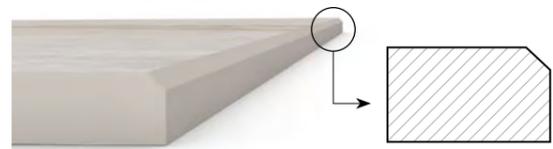
STRAIGHT 45° EDGE



ROUNDED 45° EDGE



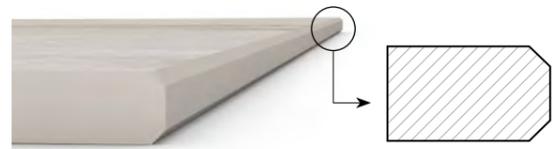
STRAIGHT 90° EDGE



ROUNDED 90° EDGE



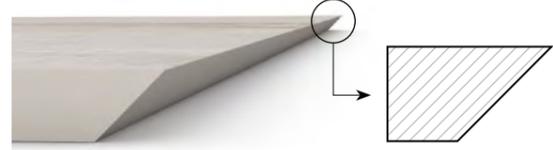
DOUBLE BEVEL STRAIGHT 90° EDGE



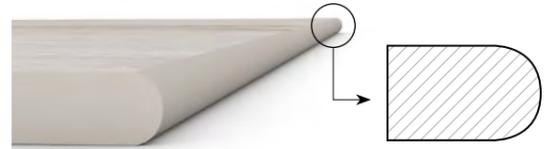
DOUBLE BEVEL ROUNDED 90° EDGE



45° EDGE



BULLNOSE EDGE



COVED EDGE



45° EDGES on slabs 6.5 mm and 12 mm thick

This type of edge is useful for creating mitered aprons on the outside edges of the slab, or to create integrated sinks. For both types, use a 2 part epoxy adhesive in the same color as the surface of the slab. The use of a 45° turn down apron allows you to create the appearance of a thicker slab.

Using the appropriate plywood, backer board or other substrate material mounted on top of the cabinets under the porcelain slab will provide the additional thickness necessary to support the 45° apron. Thickness of the substrate may be adjusted based on the desired thickness of the apron.

After gluing the apron, a bevel (straight or rounded) of at least 1 mm must be created on the top corner.

STRAIGHT EDGE

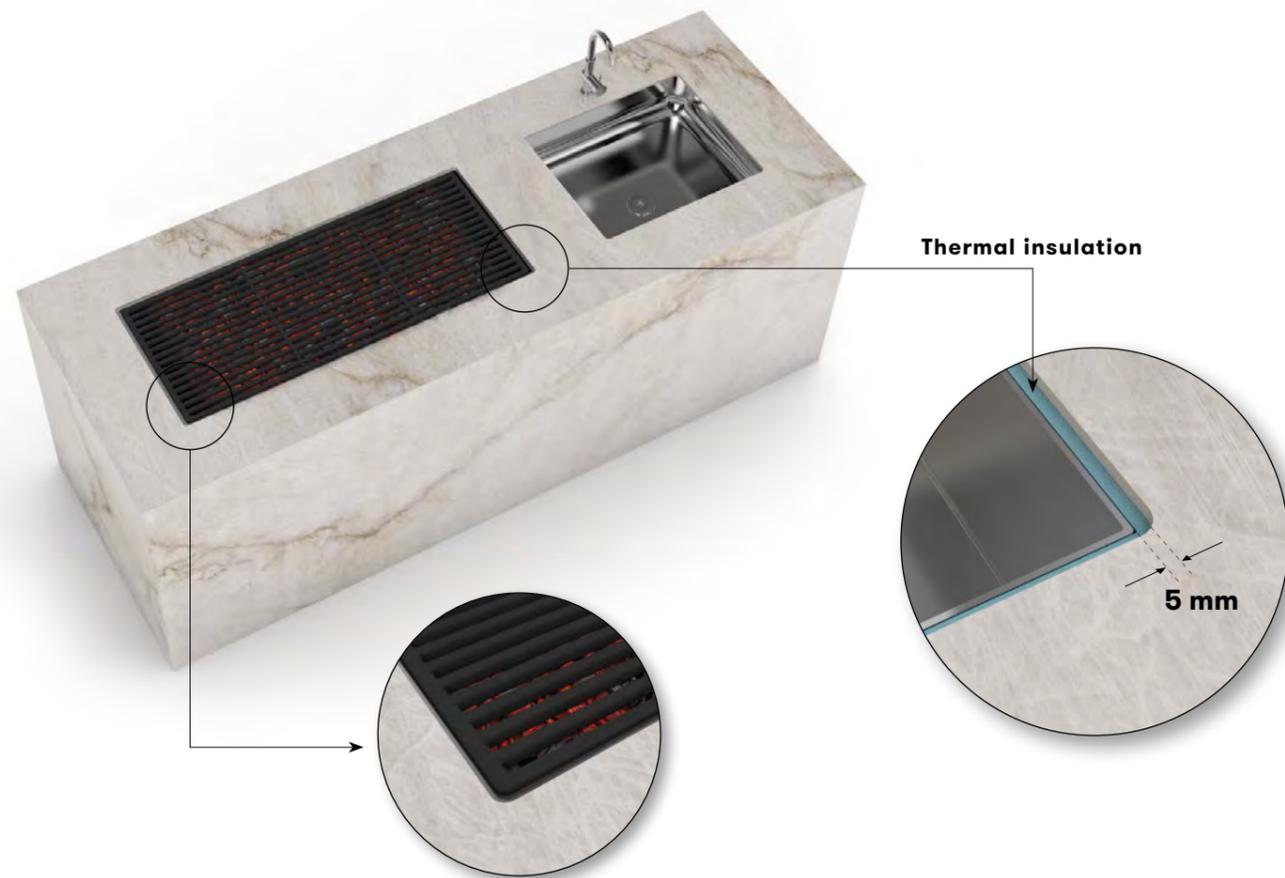


ROUNDED EDGE



HEAT

HEAT AND THERMAL SHOCK RESISTANCE of slabs 6.5 mm and 12 mm thick



Stratus slabs withstand very wide temperature ranges and offer high heat resistance. Under the parameters of the ISO 10545-8 standard (determination of linear thermal expansion coefficient; see technical section of this catalogue), countertops created with Stratus slabs undergo controlled expansion with no impact on their mechanical strength, and they can therefore also incorporate grills and barbecues.

When doing this, in order to ensure that sufficient spaces are left, it is important to find out how much the other materials used tend to expand. This applies in particular to metals, which tend to expand considerably, and should therefore never be left in direct contact with slabs. When constructing grills or barbecues, also polish the edges of the recesses to prevent crazing along the cuts.

There must be gap of at least 5 mm between the grill and/or barbecue and the edge of the slab. This gap must be filled with fiberglass or other thermal insulation materials of the same type.

CAUTION: Stratus slabs must never be used to line fireplaces and/or barbecues.



Stratus slabs may also be used to cover the outsides, fronts and sides of normal and ethanol fireplaces. Refractory internal walls must always be constructed to separate the slabs from the heat.

CARE AND CLEANING

INSTRUCTIONS FOR INITIAL CLEANING AFTER INSTALLATION

Quick, thorough initial cleaning is of fundamental importance and is necessary on all types of ceramic surfaces to allow easy subsequent daily cleaning. In the event of the failure to carry out this procedure properly, smears may be left which make it impossible to keep the floor clean in spite of thorough routine cleaning.

The surface must be washed thoroughly to remove cement and grout residues. For cement-based grouts, clean within no more than 48 hours. For grouts containing latex or epoxy resins, cleaning must be carried out very quickly, since the components are very difficult to remove once set.

The recommended products for this type of cleaning are acid-based (see table of examples).

To clean, proceed as follows:

- Apply the acid product diluted in a 10-20% solution to the surface.
- Wait 7/10 minutes.
- Clean with a vigorous scrubbing action. Use manual cleaning tools, or appropriate floor cleaning appliances (floor cleaners fitted with white felt brushes are recommended; do not use black brushes which leave a carbon residue). Take care to clean the whole surface as evenly as possible.
- Neutralise the acid solution by washing with plenty of water, hot if possible.

Keep rinsing until all acid residue has been removed.

To aid in the initial acid cleaning operation, use of a special vacuum drier is recommended to prevent the water-acid solution from drying; if the solution dries to form a coating over the surface, the cleaning procedure will have failed. For structured products, with noticeable relief patterns or anti-slip surfaces, acid washing must be carried out as soon as possible after installation. Before washing with acid, excess grout should be removed with a sponge and water during the installation procedure itself.

The effect of the washing operation should be tested on a spare tile before proceeding, especially in the case of semi-polished or polished products.

PROTECTING THE FLOOR DURING THE REMAINDER OF THE CONSTRUCTION WORK

After installation and cleaning, it is essential to take special care to protect the floor to prevent damage during finishing works on the site. The entire surface should be covered with cardboard of suitable thickness.

ROUTINE CLEANING INSTRUCTIONS

Emilceramica products are easy to care for, confirming our commitment to the environment. However, cleaning procedures and frequency will always depend on the context in which the tiles are used.

For effective care, we recommend the following:

1. Do not leave dirt on the surface for too long.
2. Wash surfaces regularly with neutral or degreasing cleaners diluted in hot water, following the instructions on the pack.
3. Rinse with clean water.

EXTRAORDINARY CLEANING INSTRUCTIONS

Extraordinary cleaning procedures are needed if the floor becomes stained or dirty with specific substances due to accidents. In this case, professional, alkaline cleaners, specifically developed for the type of dirt to be removed (see table of examples), are required.

FOR EFFECTIVE EXTRAORDINARY CLEANING, WE RECOMMEND THE FOLLOWING:

1. Wash with water to remove superficial dirt.
2. Apply the alkaline product diluted in a solution of about 3% to the surface. The cleaner concentration can be gradually increased to deal with difficult cases where coatings or unusually tough stains have to be removed.
3. Wait 7/10 minutes. For stubborn stains, the abrasive effect can be increased by using a dry powder soap, sprinkling it over the cleaner at the end of the waiting time.
4. Clean with a vigorous scrubbing action. Use suitable manual cleaning tools or appropriate floor cleaning appliances (floor cleaners fitted with white felt brushes are recommended; do not use black brushes which leave a carbon residue). Take care to clean the whole surface as evenly as possible.
5. Rinse with plenty of water, hot if possible. Keep rinsing until all residue has been removed.

TYPE OF DIRT	RECOMMENDED CLEANER					
	Solvent (acetone, turpentine or dry-cleaning fluid)		Acid cleaner		Alkaline cleaner	
	FILA	FABER	FILA	FABER	FILA	FABER
Beer, wine					FILA PS - 87	Coloured Stain Remover
Coffee					FILA PS - 87	Coloured Stain Remover
Tar	FILA SOLV	Solvent Stripper				
Rubber	FILA SOLV	Solvent Stripper				
Cement			DETERDEK	Cement Remover		
Candle wax	FILA SOLV	Wax Remover				
Coca Cola					FILA PS - 87	Coloured Stain Remover
Lime bloom			DETERDEK	Cement Remover		
Plaster			DETERDEK	Cement Remover		
Animal fats					FILA SOLV	Wax Remover
Vegetable fats					FILA SOLV	Wax Remover
Ice-cream					FILA SOLV	Wax Remover
Inks					FILA PS - 87 - SR 95	Coloured Stain Remover
Marker pens					FILA PS - 87	Coloured Stain Remover
Ketchup					FILA PS - 87	Coloured Stain Remover
Mayonnaise					FILA PS - 87	Coloured Stain Remover
Jams					FILA PS - 87	Coloured Stain Remover
Engine / silicone oils	FILA SOLV	Solvent Stripper			FILA PS - 87	Coloured Stain Remover
Flaxseed oil	FILA SOLV	Solvent Stripper				
Tyre					FILA PS - 87	Wax Remover Solvent Stripper
Metal residues			DETERDEK	Cement Remover		
Resins or enamels			FILA NO PAINT STAR			
Lipstick					FILA PS - 87	Tile Cleaner
Rust			DETERDEK	Cement Remover		
Grouting material			DETERDEK	Cement Remover		
Emulsion paints			DETERDEK	Cement Remover		
Silicone	FILA SOLV	Alkaline Cleaner				
Chewing-gum					FILA PS - 87	Solvent Stripper

IMPORTANT!

Take great care when using acids or other chemical products; comply strictly with the instructions provided by the producer on the pack. Always start using products diluted 1:5 in water and gradually increase the concentration if the stain is not removed.

TECHNICAL FEATURES

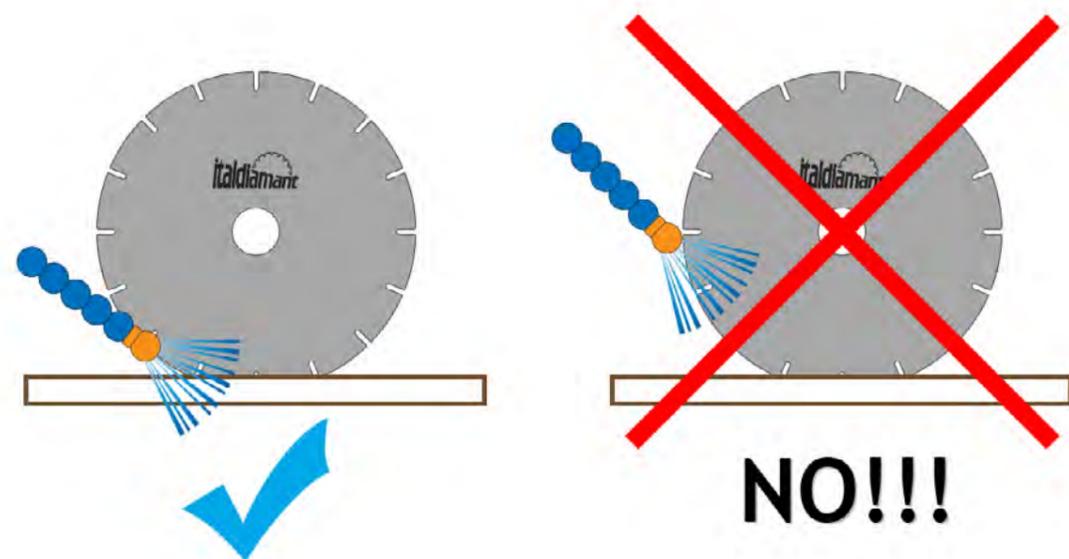
TECHNICAL FEATURES Caratteristiche Tecniche Caracteristiques Techniques Technische Eigenschaften Características Técnicas	TESTING METHOD Metodo di prova Méthode d'essai Prüfmethode Método de prueba	VALUES - Valori - Valeurs - Werte - Valores			
		6,5 mm		12 mm	
		Nat	Lap Luc	Nat	Lap Luc
LENGTH AND WIDTH (A) - Lunghezza e Larghezza Longueur et largeur - Länge und Breite - Longitud y anchura	UNI EN ISO 10545/2	± 2% (Max 5mm)	± 2% (Max 5mm)	-	-
LENGTH AND WIDTH (B) - Lunghezza e Larghezza Longueur et largeur - Länge und Breite - Longitud y anchura	UNI EN ISO 10545/2	± 0,6% / ± 2,0 mm	± 0,6% / ± 2,0 mm	-	-
THICKNESS - Spessore - Epaisseur - Stärke - Espesor	UNI EN ISO 10545/2	± 0,5% / ± 0,5 mm			
EDGE STRAIGHTNESS - Rettilinearità degli spigoli Rectitude des arêtes - Geradlinigkeit der Kanten Rectitud de los cantos	UNI EN ISO 10545/2	± 0,5% / ± 1,5 mm	± 0,5% / ± 1,5 mm	-	-
ORTHOGONALITY - Ortogonalità Orthogonalité - Rechtwinkligkeit - Ortogonalidad	UNI EN ISO 10545/2	± 0,5% / ± 2,0 mm	± 0,5% / ± 2,0 mm	-	-
FLATNESS - Planarità - Planéité - Ebenföchigkeit - Planaridad	UNI EN ISO 10545/2	± 0,5% / ± 2,0 mm			
APPEARANCE - Aspetto - Aspect - Aspecto	UNI EN ISO 10545/2	> 95%	> 95%	> 95%	> 95%
WATER ABSORPTION (Average value expressed in %) Assorbimento d'acqua (Valore medio in %) Absorption d'eau (Valeur moyenne en %) Wasseraufnahme (Durchschnittswert in %) Absorción de agua (Valor medio en %)	UNI EN ISO 10545/3 ASTM C373	Conforme Compliant	Conforme Compliant	Conforme Compliant	Conforme Compliant
MODULUS OF RUPTURE - Modulo di rottura Resistencia a la flexion - Biegefestigkeit - Resistencia a la flexion	UNI EN ISO 10545/4	≥ 35 N/mm ²			
BREAKING STRENGTH - Forza di rottura Résistance à la rupture - Bruchlast - Resistencia a la rotura	UNI EN ISO 10545/4 ASTM C648	≥ 700 N 250 Lbs	≥ 700 N 250 Lbs	≥ 1300 N 250 Lbs	≥ 1300 N 250 Lbs
IMPACT RESISTANCE - Resistenza all'urto Résistance aux chocs - Schlagfestigkeit - Resistencia al impacto	UNI EN ISO 10545/5	-	-	0,85	0,85
RESISTANCE TO SURFACE ABRASION Resistenza all'abrasione superficiale Résistance à l'abrasion superficielle Abriebfestigkeit Resistencia a la abrasión superficial	UNI EN ISO 10545/7	Dark colors: 2-3 Medium colors: 4 Light colors: 5			
LINEAR THERMAL EXPANSION Coefficiente di dilatazione termica lineare Linear thermal expansion coefficient Coefficient linéaire de dilatation thermique Linearer Wärmeausdehnungskoeffizient Coeficiente de dilatación térmica lineal	UNI EN ISO 10545/8	≤ 9 x10 ⁻⁶ °C ⁻¹			
THERMAL SHOCK RESISTANCE - Resistenza agli sbalzi termici - Résistance aux écarts de température Temperaturwechselbeständigkeit - Resistencia al choque térmico	UNI EN ISO 10545/9	Conforme	Conforme	Conforme	Conforme
HAIR-CRACKING RESISTANCE - Resistenza al cavillo Résistance aux craquelures - Haarrissbeständigkeit Resistencia al cuarteo	UNI EN ISO 10545/11	Conforme	Conforme	Conforme	Conforme
FROST RESISTANCE - Resistenza al gelo Résistance au gel - Frostbeständigkeit - Resistencia a las heladas	UNI EN ISO 10545/12 ASTM C1026	Conforme Unaffected	Conforme Unaffected	Conforme Unaffected	Conforme Unaffected
CHEMICAL RESISTANCE to high and low acid and basic concentrations Resistenza Chimica ad alte e basse concentrazioni di acidi e basi Résistance chimique aux hautes et basses concentrations d'acides et de bases Chemikalienfestigkeit bei hohen und niedrigen Konzentrationen von Säuren und Basen Resistencia química con concentraciones altas y bajas de ácidos y bases	UNI EN ISO 10545/13 ASTM C-650	A - LA - LB - HA - HB Unaffected	A - LA - LB - HA - HB Unaffected	A - LA - LB - HA - HB Unaffected	A - LA - LB - HA - HB Unaffected
STAIN RESISTANCE - Resistenza alle macchie Résistance aux taches - Fleckenbeständigkeit Resistencia a las manchas	UNI EN ISO 10545/14 CTI 81-7D	5 No Evident Variation	5 No Evident Variation	5 No Evident Variation	5 No Evident Variation
SLIP RESISTANCE Coefficiente di attrito Coefficient de glissement Rutschfestigkeit Barfußbereich Coeficiente de atrito medio	DIN 51130	R9	-	R9	-
	DIN 51097	Na	-	Na	-
	ANSI A 137.1-2012 DCOF (Section 9.6)	≥ 0,42	-	≥ 0,42	-
	B.C.R.A.	≥ 0,40	-	≥ 0,40	-
	AS 4586: 2013 Slip resistance classification of new pedestrian surface materials	Na	-	Na	-
BS 7976-2: 2002 Pendulum testers	Na	-	Na	-	
ENV 12633-2006 Method of determination of unpolished and polished slip/skid resistance value	Na	-	Na	-	
COLOUR RESISTANCE TO LIGHT EXPOSURE Resistenza dei colori alla luce - Résistance des couleurs à la lumière Lichtechtheit der Farben - Resistencia de los colores a la exposición de la luz	DIN 51094	Conforme	Conforme	Conforme	Conforme
RELEASE OF DANGEROUS SUBSTANCES (PIOMBO - CADMIO) Rilascio di sostanze pericolose (Piombo/Cadmio) Dégagement de substances dangereuses (Plombo/Cadmio) Freisetzung gefährlicher Stoffe (Piombo/Cadmio) Emisión de substancias peligrosas (Plombo/Cadmio)	UNI EN ISO 10545/15 (mg/l)	-	-	0	0
CALCULATION OF APPARENT DENSITY Determinazione della massa volumetrica apparente Détermination de la masse volumique apparente - Bestimmung der Rohdichte - Determinación de la masa volumétrica aparente	UNI EN ISO 14617/1 (Kg/m ³)	-	-	2500	2500
CALCULATION OF WATER ABSORPTION Determinazione dell'assorbimento d'acqua Détermination de l'absorption d'eau - Bestimmung der Wasseraufnahme - Determinación de la absorción de agua	UNI EN ISO 14617/1 (%)	-	-	< 01	< 01
BENDING STRENGTH - Resistenza alla flessione Résistance à la flexion - Biegefestigkeit - Resistencia a la flexión	UNI EN ISO 14617/2 (MPa)	-	-	> 35	> 35

TECHNICAL FEATURES Caratteristiche Tecniche Caracteristiques Techniques Technische Eigenschaften Características Técnicas	TESTING METHOD Metodo di prova Méthode d'essai Prüfmethode Método de prueba	VALUES - Valori - Valeurs - Werte - Valores			
		6,5 mm		12 mm	
		Nat	Lap Luc	Nat	Lap Luc
DEEP ABRASION - Abrasione profonda Abrasion profonde - Tiefenerschleiß - Abrasión profunda	UNI EN ISO 14617/4 (mm)	-	-	24-27	24-27
CALCULATION OF FREEZE Determinazione della resistenza a gelo-disgelo Détermination de la résistance au gel/dégel Bestimmung der Frost-Tauwechsel-Beständigkeit Determinación de la resistencia a las heladas	UNI EN ISO 14617/5	-	-	No change in bending strength after thermal cycle - Nessuna variazione di carico di rottura dopo ciclo termico - Aucune variation de la charge de rupture après le cycle thermique - Keine Bruchlastveränderung nach Temperaturzyklus - Ninguna variación de carga de rotura tras ciclo térmico	No change in bending strength after thermal cycle - Nessuna variazione di carico di rottura dopo ciclo termico - Aucune variation de la charge de rupture après le cycle thermique - Keine Bruchlastveränderung nach Temperaturzyklus - Ninguna variación de carga de rotura tras ciclo térmico
CALCULATION OF THERMAL SHOCK RESISTANCE Determinazione della resistenza allo shock termico Détermination de la résistance aux chocs thermiques Bestimmung der Temperaturwechselbeständigkeit Determinación de la resistencia a los cambios bruscos de temperatura	UNI EN ISO 14617/6	-	-	No change in bending strength after thermal cycle - Nessuna variazione di carico di rottura dopo ciclo termico - Aucune variation de la charge de rupture après le cycle thermique - Keine Bruchlastveränderung nach Temperaturzyklus - Ninguna variación de carga de rotura tras ciclo térmico	No change in bending strength after thermal cycle - Nessuna variazione di carico di rottura dopo ciclo termico - Aucune variation de la charge de rupture après le cycle thermique - Keine Bruchlastveränderung nach Temperaturzyklus - Ninguna variación de carga de rotura tras ciclo térmico
IMPACT RESISTANCE - Resistenza all'urto Résistance aux chocs - Schlagfestigkeit - Resistencia al impacto	UNI EN ISO 14617/9	-	-	3J	3J
VOLATILE ORGANIC COMPOUND EMISSION TEST Prova di emissioni di composti organici volatili Essai d'émissions de composés organiques volatils Messung der Emission von flüchtigen organischen Verbindungen Prueba de emisiones de compuestos orgánicos volátiles	ISO 16000/9	-	-	Class A+ / Classe A+ / Classe A+ Klasse A+ / Categoría A+	Class A+ / Classe A+ / Classe A+ Klasse A+ / Categoría A+
RESISTANCE TO COLD LIQUIDS - Resistenza ai liquidi freddi Résistance aux liquides froids - Beständigkeit gegen kalte Flüssigkeiten - Resistencia a los líquidos fríos	EN 12720:2013	-	-	Class 5 to Class 3 - da Classe 5 a Classe 3 - de Classe 5 à Classe 3 - von Klasse 5 bis Klasse 3 - de Categoría 5 a Categoría 3	Class 5 to Class 3 - da Classe 5 a Classe 3 - de Classe 5 à Classe 3 - von Klasse 5 bis Klasse 3 - de Categoría 5 a Categoría 3
RESISTANCE TO DAMP HEAT - Resistenza al calore umido Résistance à la chaleur humide - Beständigkeit gegen feuchte Hitze Resistencia al calor húmedo	EN 12721:2013	-	-	CEN/TS 16209 Class A / Classe A / Classe A Klasse A / Categoría A	CEN/TS 16209 Class A / Classe A / Classe A Klasse A / Categoría A
RESISTANCE TO DRY HEAT - Resistenza al calore secco Résistance à la chaleur sèche - Beständigkeit gegen trockene Hitze Resistencia al calor seco	EN 12722:2013	-	-	CEN/TS 16209 Class A / Classe A / Classe A Klasse A / Categoría A	CEN/TS 16209 Class A / Classe A / Classe A Klasse A / Categoría A
DIRT RETENTION - Tendenza a ritenere lo sporco Tendance à retenir la saleté - Neigung zur Schmutzbindung Tendencia a retener la suciedad	EN 9300:2015	-	-	No visible change - Nessun cambiamento visibile - Pas d'altération visible - Keine sichtbare Veränderung - Ningun cambio visible	No visible change - Nessun cambiamento visibile - Pas d'altération visible - Keine sichtbare Veränderung - Ningun cambio visible
SCRATCH RESISTANCE - Resistenza alla graffiatura Résistance aux rayures - Kratzfestigkeit - Resistencia a los arañazos	EN 15186:2012 met. B	-	-	CEN/TS 16209 Class A / Classe A / Classe A Klasse A / Categoría A	CEN/TS 16209 Class A / Classe A / Classe A Klasse A / Categoría A
RESISTANCE TO FUNGI - Resistenza ai funghi Résistance aux champignons - Beständigkeit gegen Schimmel Resistencia a los hongos	ASTM G 21	-	-	No fungi - Nessun crescita fungina - Aucune croissance fongique - Kein Schimmelwachstum - Ningun crecimiento de hongos	No fungi - Nessun crescita fungina - Aucune croissance fongique - Kein Schimmelwachstum - Ningun crecimiento de hongos

WATER SUPPLY FOR DIAMOND CUTTING BLADES

Conditions for optimum performance:

- **PROPERLY ORIENTED WATER FLOW:** exactly in the point of contact between blade and tile

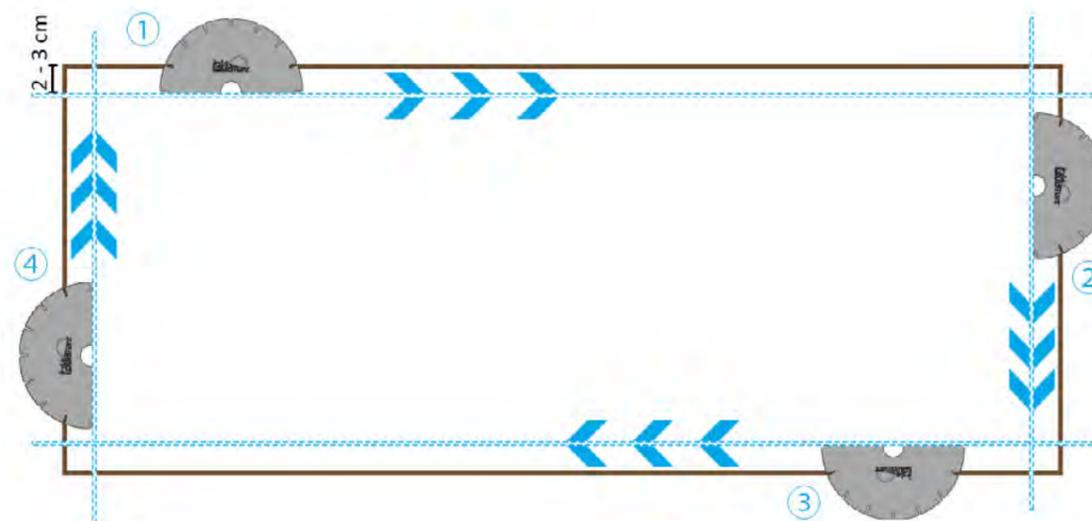


- **CLEAN WATER:** no mud nor ceramic particles inside!
- **FRESH WATER:** it needs to REFRESH the blades!
- **ENOUGH PRESSURE:** to push away the cutting waste!

Always mind water pressure doesn't drop and let the flow fall down before arriving at the advised contact area (see picture), otherwise the cooling of the blade is much less efficient. Considering that a blade under operation can reach a very high temperature, the right orientation of the water flow is absolutely determinant for the blade cooling, for its homogeneous consumption, for its life time, and for the quality of its cutting on the surface of the tiles. A low but rightly orientated flush is more efficient than a huge quantity of water "wasted" due the centrifuge force of the blade which drags most of it away before it arrives at the right point with the right pressure.

BASICS FOR THE CORRECT USE OF DIAMOND BLADES

- The worktop must be in good condition and flat. If the saw worktop is made of wood or concrete we recommend flattening it otherwise, we suggest placing a quartz slab or a high-intensity rubber mat between the material and the worktop. This greatly improves the finish of the cut.
- Be very careful when handling slabs, avoid any kind of bending. This is the cause of material breakage during the cut.
- Before starting, we recommend removing the tension from all the slabs by cutting the edge with the saw blade for 2 - 3 cm. This operation must be done on all four sides.



- Perform single-pass cutting. Once the cut is finished, avoid moving backward with the blade still inside the material this can cause chipping and closing of the abrasive part of the tool.
- Respect all the advancement and engine speed parameters.
- To sharp or clean the blade, make some cuts on the quartz/engineering stone (about 15 linear meters) or use our sharpening block.

WORKING PARAMETERS FOR DIAMOND BLADES

The tests we have run gave good cutting results even at 45°, as well as for direct cutting from top to bottom (standard working conditions on c.n.c. machines).

The following parameters are subject to variations according to the material, machines and working conditions, refer to service.italdiamant.com for updated parameters.

N.B.: It is fundamental that the blade receive the right quantity of water on the cutting point in order to refresh and clean the abrasive rim (see pag.2). Insufficient water flow can reduce both performance and lifetime of the blade.



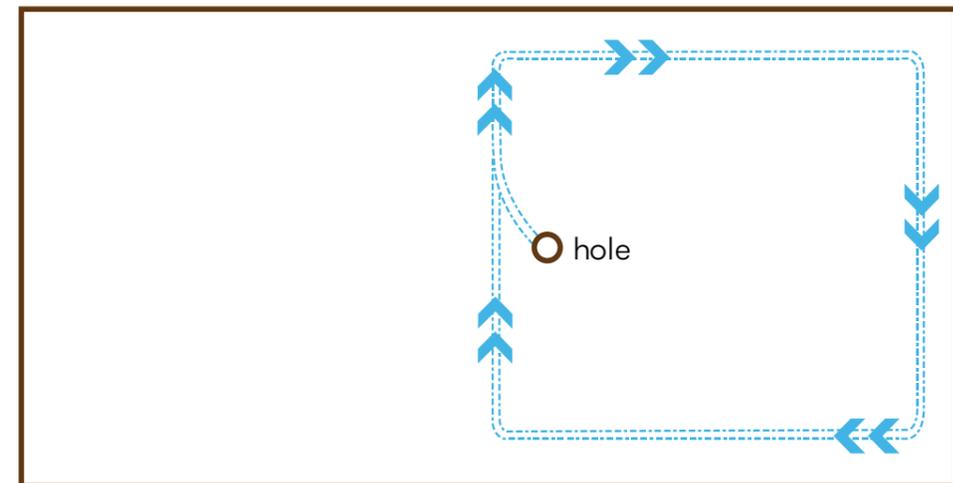
Tables of recommended travel speed and rotation on (RPM) by type and material

Diameter	Slab thickness	RPM	Dark or colourful speed m/min		White or light colours speed m/min	
			Standard	PLUS	Standard	PLUS
Ø 300 mm	6,5 - 12 mm	2100 - 2.800	1,5	1,8	1,2	1,5
Ø 350 mm	6,5 - 12 mm	1900 - 2.500	1,5	1,8	1,2	1,5
Ø 400 mm	6,5 - 12 mm	1500 - 2.300	1,5	1,8	1,2	1,5
Ø 450 mm	6,5 - 12 mm	1.200 - 2.000	1,5	1,8	1,2	1,5
Ø 500 mm	6,5 - 12 mm	1.000 - 1.600	1,5	1,8	1,2	1,5

BASICS FOR THE CORRECT USE OF CORE DRILLS AND ROUTERS

Usage on CNC machines:

- To drill the internal holes, on CNC machines, the slab must be well secured by the suction cups. It is highly recommended to put at least two suction cups near the part to be drilled.
- To cut with the router it is necessary to first create a hole with the core drill, normally Ø 35 mm, this hole should be situated in the central area of the short side of the slab. After this first operation, enter inside the hole with the router and proceed following the arrows as shown in the photo below.



Usage on 5-axis bridge saw machine with swivel head:

For this application, it is important to use our reinforced router with the diamond segment on the top of the tool (page ...). Using the top part of the tool drill the material with a down feed of 15 mm/min. When the hole is done enter inside the cut with the lateral diamond of the tool and proceed with the correct feed rate as shown in the table page 6.

ATTENTION: on this type of machine, a greater supply of water is essential in the use of the tools.

DIAMOND DRILL BITS



Possibly program the machine by cutting in steps in order to cool out the diamond.
For instance: Cutting down fit 8 mm then stop and pull up of 0,3 mm and then cutting again 8 mm down and pull up again 0,3 mm and so on until completing the hole.

Working parameters

Diameter	RPM	Drilling feed rate	Average life
From Ø 8 until Ø 25 mm	3500 - 4.000	30 mm/min	80 - 100 holes
Ø 30 - 35 mm	2.000 - 3.000	20 mm/min	80 - 100 holes
From Ø 50 until Ø 125 mm	1.000 - 2.000	20 mm/min	80 - 100 holes

DIAMOND FINGER BITS

** Single step **



Working parameters

Diameter	RPM	Cutting rate feed for material's dark or colourful	Cutting rate feed for material's white or light colours	REINFORCED finger bit drilling feed rate	Average life
Ø 20 - 23 mm	3.500 - 4.500	200 mm/min	160 mm/min	15 mm/min	75 - 90 linear metres

"COUNTERSINK" DRILL BITS



Working parameters

Diameter	Removal	RPM	Drilling feed rate
From Ø 8 until 15 mm	until 3 mm each step	5.000 - 7.000	200 - 300 mm/min
Ø 20 mm	until 2 mm each step	5.000 - 7.000	200 mm/min

DIAMOND ROUTER BITS FOR DRAIN BOARD



Working parameters

Diameter	Removal	RPM	Cutting feed rate
Ø 12 - 15 mm	until 3 mm each step	5.000 - 7.000	200 - 300 mm/min

DIAMOND DRUM WHEELS



Working parameters

Diameter	Removal	RPM	Cutting feed rate
From Ø 60 until 90 mm	until 3 mm each step	4.500 - 6.500	400 - 600 mm/min

DIAMOND PROFILE WHEELS FOR 45°



Working parameters

Diameter	RPM	Cutting feed rate
Ø 80 mm	3.000 - 4.000	200 mm/min

DIAMOND BLADES FOR CNC MACHINE



Working parameters

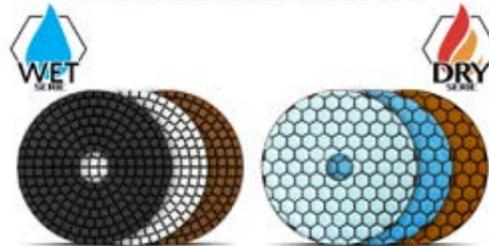
Diameter	RPM
Ø 210 mm	2.800 - 3.000
Ø 260 mm	2.500 - 2.800

DIACER FOR POLISHING



Working parameters

Diameter	RPM
Ø 100 mm	4.000



WDD WET DRILLING BITS



Working parameters

Diameter	RPM	Note
for every diameter	2.000 - 2+00	suggested a plenty water flow

DIAMOND BLADES FOR DRY USE



Working parameters

Diameter	RPM
Ø 115 - 125 mm	10.000 - 11.000
Ø 230 mm	5.000 - 6.000

DIAMOND GRINDING CUPS



Working parameters

Diameter	RPM
Ø 100 mm	4.000

ROUTER BITS FOR SINK



Working parameters

Diameter	RPM
Ø 10 mm	5.000 / 6.000

G35 DRY DRILLING BITS



Working parameters

Diameter	RPM
for every diameter	10.000 - 11.000



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