VICOSTONE SINTERED

TECHNICAL AND INSTALLATION MANUAL

01

PRODUCT

Vicostone is a leading brand in the large-format sintered slab market, where each product represents the fusion of expertise and the application of cutting-edge technological innovation. This unique combination enables Vicostone to deliver products of exceptional quality and unmatched versatility, providing solutions that meet the most diverse design needs and demands.

Whether for architects, interior designers, builders, or those simply looking to transform their homes, Vicostone's commitment to quality, innovation, and customer satisfaction ensures that each project becomes a masterpiece, where beauty merges with functionality to create spaces that inspire and captivate in equal measure.

Why choose VICOSTONE SINTERED

Our collections are thoughtfully designed to meet the needs of every audience; our portfolio includes a wide range of marble and quartzite inspired design to basic color options. Our mission is to create spaces that evoke feelings of comfort in every setting.

ADVANTAGES

- DIMENSION AND APPERANCE
- N/mm² — FLEXURAL STRENGTH
- WATERPROOF
- tc° — THERMAL RESISTANCE
- mm³ — RESISTANCE TO DEEP ABRASION
- FROST RESISTANCE
- RESISTANCE TO SUPERFICIAL ABRASION
- CRAZING RESISTANCE
- CHEMICAL RESISTANCE
- MOHS — SCRATCH RESISTANCE
- STAIN RESISTANCE
- FIREPROOF

FINISHES

POLISHED/MATTE/MATTE VEINTOUCH

FORMAT

1620mm x 3240mm

THICKNESS

6mm 12mm 20mm

6mm	*WALL TILE:* *Interior and outdoor.* *FAÇADES.* *FLOORING:* *Interior and outdoor* *FURNITURE.*
12mm	*COUNTERTOPS:* *Kitchen and bath.* *FLOORING:* *Outdoor.*
20mm	*COUNTERTOPS:* *Kitchen and bath.* *FLOORING:* *Outdoor.*

SUSTAINABILITY

Vicostone is committed to the optimisation of water management, based on the principles of reuse and optimisation in the different processes. We are also committed to the endless application of energy efficiency criteria in our facilities and activities.

Applying criteria of continuous improvement, we conduct internal waste recovery and implement selective waste collection of materials such as cardboard, plastic or wood.

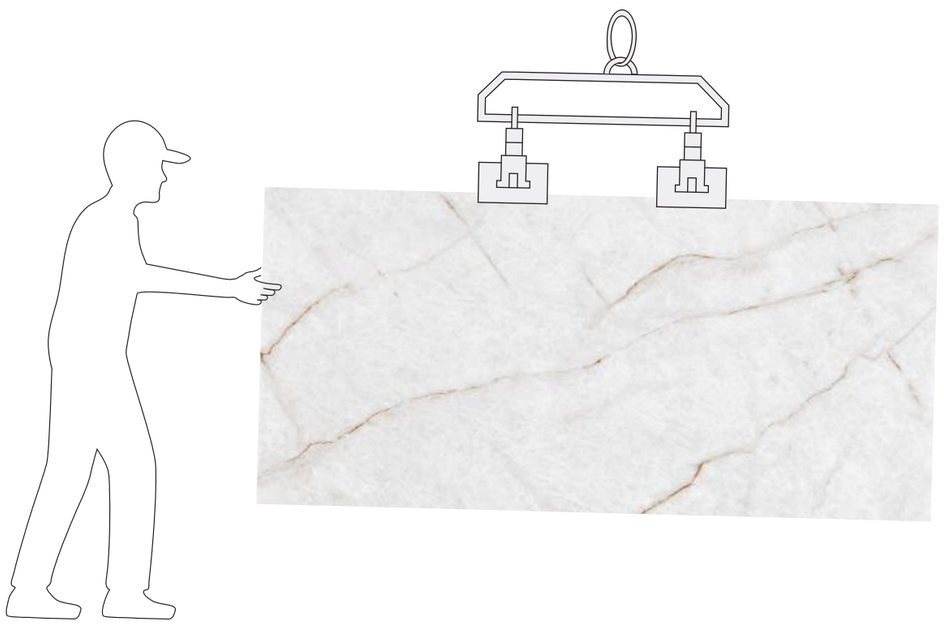
Environment | Quality | Safety

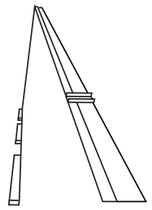
Technical information	U.M.	6 mm	12 mm	20 mm
Slab surface m^2 5.12 5.12 5.12	m^2	5.12	5.25	5.25
Slab weight kg 76 149 253	kg	77	156	260
Weight per m^2 kg 15 29 49	kg	14	29	48
Slabs per A-frame* nr. 44 22 12	nr.	44	22	14
Net m^2 per A-frame m^2 225.28 112.64 61.44	m^2	232.32	116.16	71.68
Metal A-frame weight kg 210	kg		210	
Full A-frame weight kg 3589 3377 3221	kg	3388	3344	3752
Dimensions of A-frame including packaging	mm		3300x750x1900	

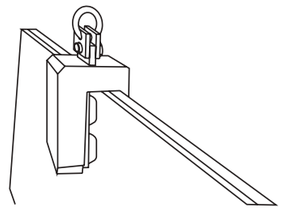
2.1 SLAB HANDLING

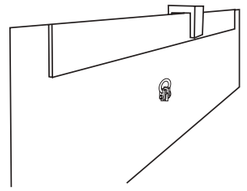
Transport with clamps

It's the best way to move 12 and 20 mm thick Vicostone slabs. Always pay attention to the movement and handling of the slabs to prevent splintering or breakage. Vicostone recommends using the following type of clamp for lifting and moving individual slabs:









The additional width of this clamp will prevent the slab from bending during handling to,

thus, prevent undesirable breakage.

Recommendations:

• Clamping more than 2 slabs at the same time is not recommended.

• Make sure to cover all metal surfaces that may come into contact with the slab with adhesive foam tape.

If this type of clamp is not available, use a 2 cm thick plank of approximately 3 m x 20 cm so the clamp can catch 12 mm slabs.

Fixing the ends of the slab with jacks to the plank so the slab doesn't sag during handling is recommended.

Position the plank to the rear of the slab to be lifted.

1) Place the clamp on the slab and plank.

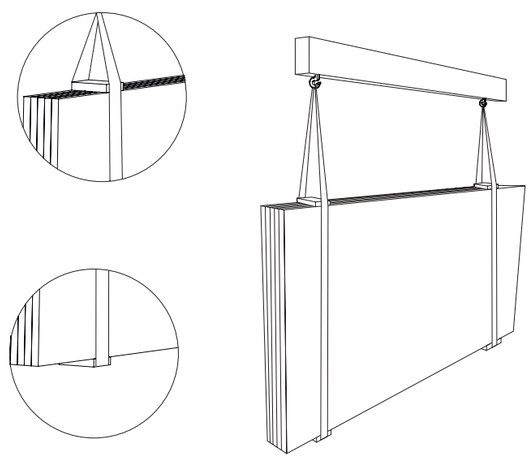
2) Fix the clamp and lift the slab and plank with care.

3) Avoid sudden changes in direction.

Transport with slings

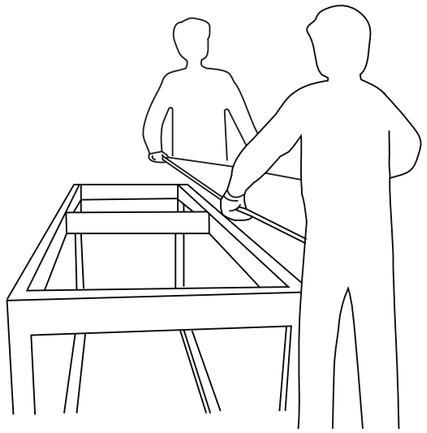
An adequate system for moving several slabs at the same time. Using canvas slings is recommended.

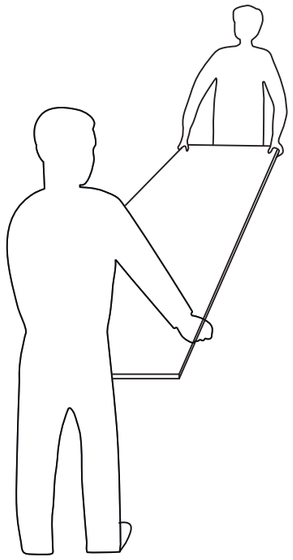
Metal slings must not be used to handle Vicostone slabs. Using wooden spacers is recommended to prevent direct contact between the slings and slabs



2.2 MANUAL TRANSPORT

Always keep in mind the weight of anything that needs to be transported. Get help from any type of support and never move slabs in a flat horizontal position as this may cause excessive buckling.





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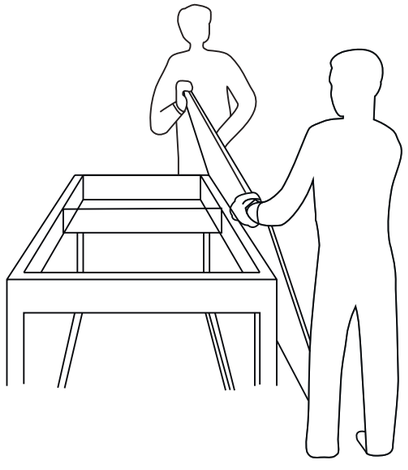

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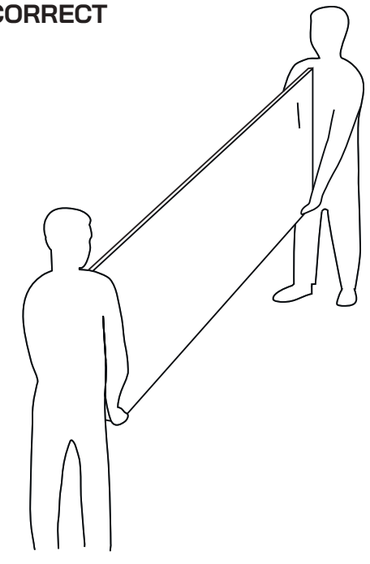

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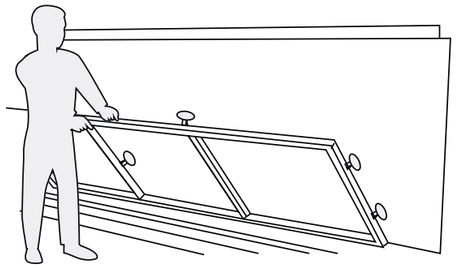
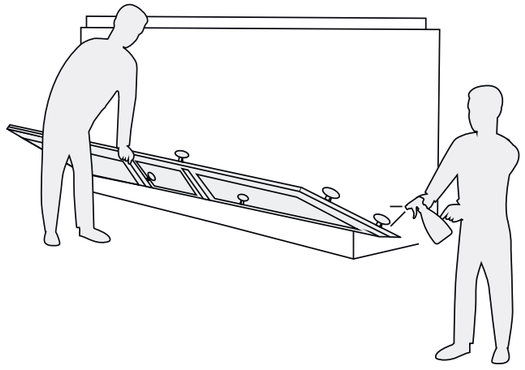
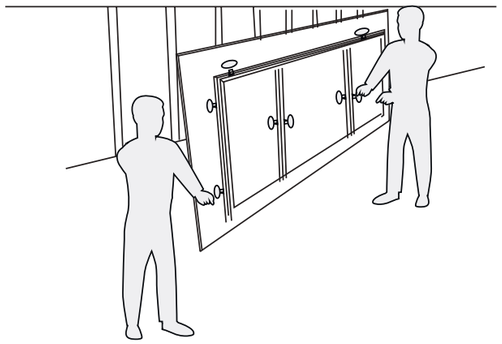
2.3 TRANSPORT BY SUCTION FRAME

This is only recommended for 6 mm thick slabs. The suction cups may be placed all along the frame to adapt to the size of the piece to be moved. Using this tool is also recommended when installing the slab in its final location.

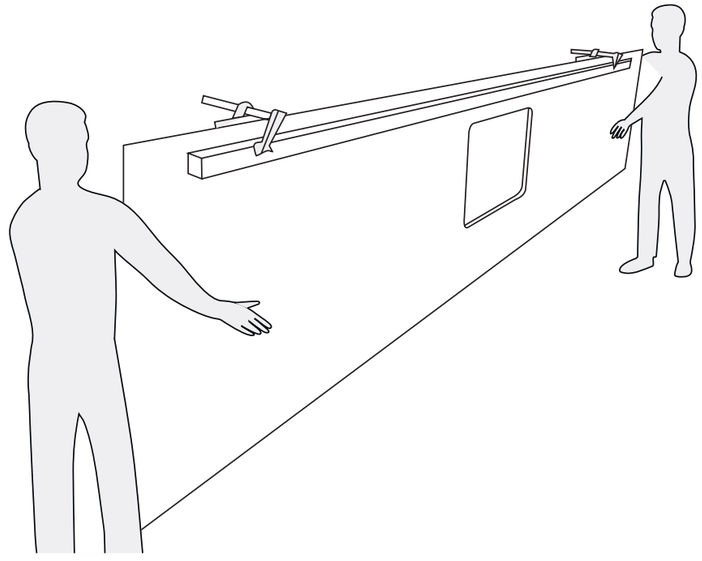






If this type of frame is not available, an aluminium rod or similar element, secured with several jacks, can also be used. This will prevent the piece from bending too much during handling.

Fixing thin, long pieces (skirting, for example) with jacks to an aluminium rod for transport is also recommended.



2.4 PACKING

After production, the slabs are placed on A-frames which are ideal for transport and storage after proper labelling.

A-frames with Vicostone slabs must be loaded, unloaded and moved using a proper lift truck, crane or other handling mechanism.

Whenever handling or moving, make sure the load is balanced.

If possible, keep your Vicostone slabs on the same A-frame they came on.

Any subsequent handling must be by using adequate A-frames or rails (wooden or metal) with proper protection to vertically support the slabs (wooden, plastic or rubber) to prevent chips and dents at the support point.

2.5 STORAGE

When storing slabs on A-frames not supplied by us, using a continuous support base or at least one with four support points for the slabs is recommended. This base must be rigid (preferably made of wood).

This will prevent splintering on the edges of the Vicostone slabs.

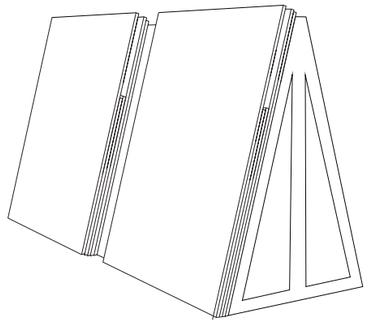
Make sure the Vicostone slabs have at least three support points (one in the middle and two on the sides).

If storing in the open air, cover the slabs with waterproof fabric.

The cut pieces may have sharp edges, so handle with care and adequate protection.

Cut material must be packaged with cardboard or similar protection on the corners and with shock absorbance panels on the perimeter edges (in adequate thicknesses) as protection against blows.

If the product is not packaged adequately, it may break.



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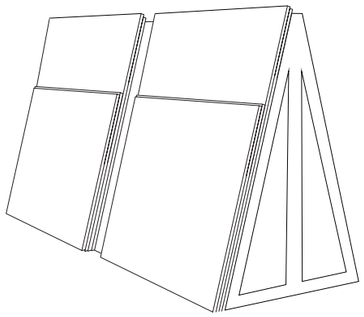

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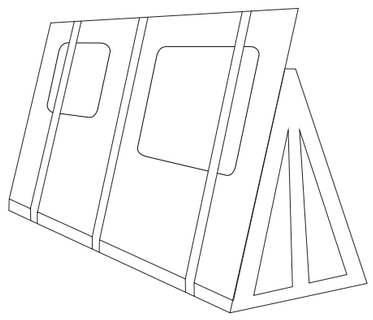
Avoid positioning large slabs against smaller slabs



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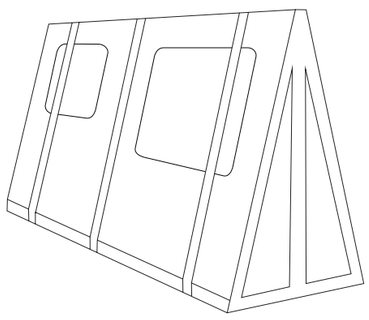

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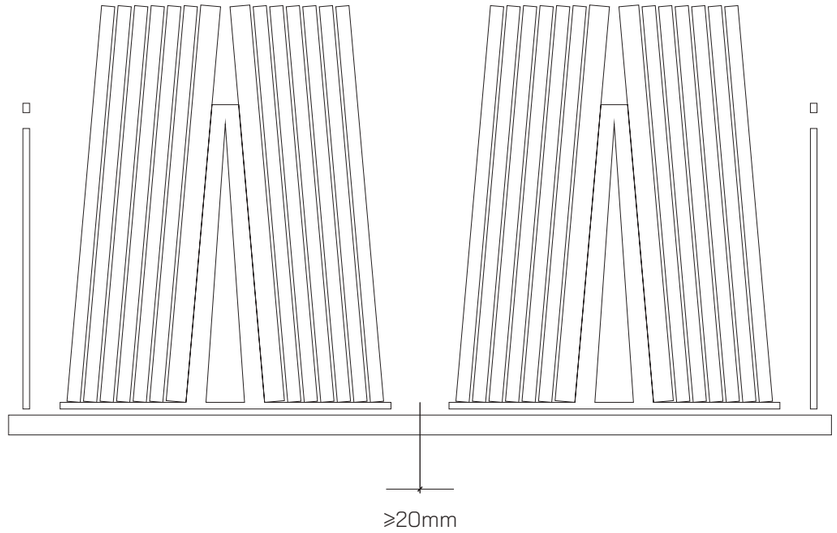
Likewise, check that the A-frame or base on which the slabs are supported is larger than the slab surface



03 RECEPTION AND QUALITY CONTROLS

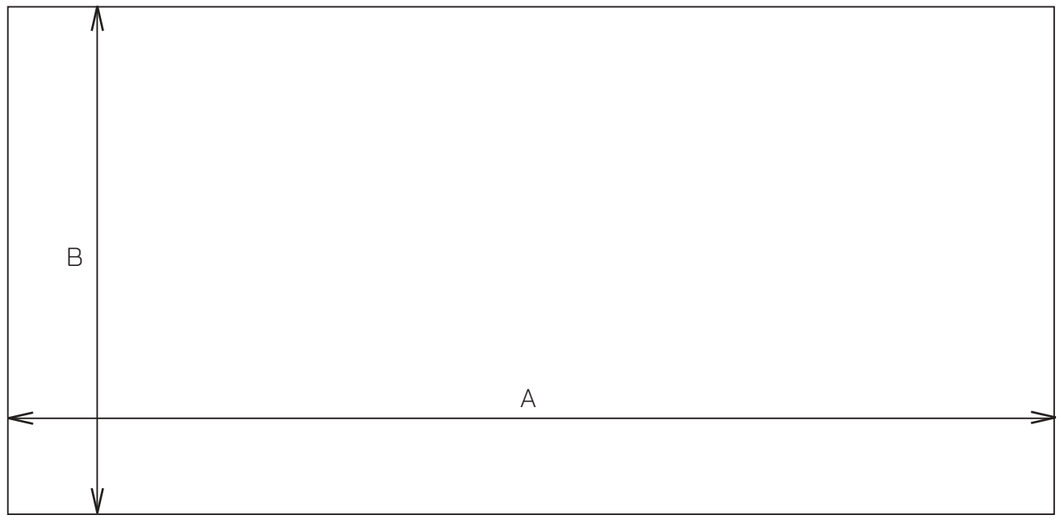
Vicostone controls the slabs in accordance with the highest standards of quality. Regardless, always inspect the material received before starting any work by following these steps:

• Check the outside of the packaging (no visible blows or damages).

• Check that everything corresponds between the transport document, order and material received. The product code is printed on the side edges of each slab.

• Visually inspect the slabs for possible surface defects: cracks, stains, discoloration, gloss variations, and imperfections.

No claims will be accepted for installed or manufactured material when defects were already present upon delivery of the material. Workers are responsible for determining whether the slabs are adequate for use. If they are not adequate, the supplier must be contacted immediately so they may be exchanged before the slabs are cut or modified in any way.



Dimensions	Lenght mm (A)	Width mm (B)
For guidance only	3240	1630
Useful for 6 mm	3197	1597
Useful for 12 mm	3200	1600
Useful for 20 mm	3200	1600

3.1 FLATNESS

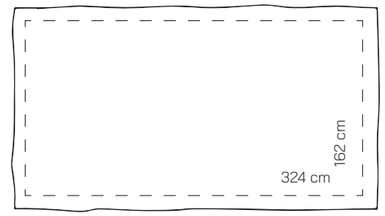
To check the flatness of a slab, position it over a completely flat horizontal base free of any residue.
Maximum tolerance on slab width and length:

Convex planarity should be measured with an aluminium rod held parallel to one side to verify it. It is possible to assess the portion of the plate with possible bending by using a 2 mm thickness gauge. If the thickness gauge does not pass underneath, there is no planarity problem.

3.2 DIMENSIONS

The term 'Full Size' means that the board has finished the production cycle without being trimmed. This is the size intended to be processed, because it gives manufacturers the opportunity to optimise their possible cutting schemes according to the project.

The size 162 x 324 cm, which corresponds to the usable area and the billable quantity, can be obtained from each board.



3.3 SLAB IDENTIFICATION

Each slab is affixed with a label indicating important information to ensure their traceability such as the model, tone an production date. Keep or record the label for future reference..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04 PRE- DESIGN RECOMMENDATIONS

Workspace: evaluating the logistics of the job is important as the installation of slabs with dimensions of 3200 x 1600 mm requires enough space for handling and installation.

Layout: due to the flatness, Vicostone slabs may be installed following any diagram, even staggered with the seams offset by 50%.

L-cuts: avoid them whenever possible; use on surfaces with the smallest slabs or by adding seams. In fact, the supports and plaster at these points transmit stress and building settlement over time which can cause material to crack due to weakening caused by the irregular cut. This phenomenon is not considered a material defect.

Material planning: when using large-size slabs, check the installation diagram and final formats to be installed to verify the quantity of material needed for the wall or floor tiling.

Always have extra material in case something breaks during the process or for future needs.

05 MANUAL CUTTING AND WORKING WITH THE 6MM+ MATERIAL

Vicostone slabs may be easily cut and perforated.

The most complicated cutting, profiling and hole-making operations can be done at specialist shops and centres with a disc saw, digital control machine, water jet cutter or other professional equipment available.

The easiest work with the material may be done directly on site. Use care when moving pieces and cutting. They can be used for dry and wet systems which are also used for glass, natural stone and porcelain tile. This means there is no problem with adjusting panel dimensions on site or making special cuts, holes, boxes, etc.

5.1 RECTILINEAR MANUAL CUTS

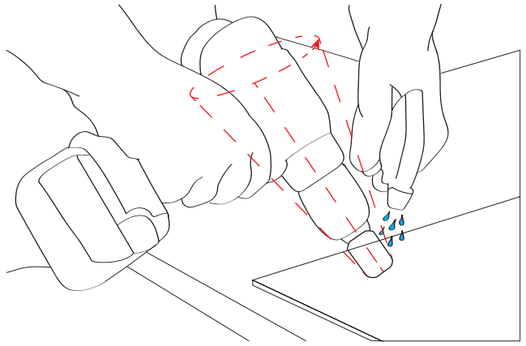
Normally used to adjust slab dimensions. Vicostone 6 mm+ slabs are supplied rectified and squared which makes the work on site much easier.

The most common method is with dry glass cutters. This system is appropriate for making 6 mm+ tiles:

1. Mark the intended cutting line.
2. Secure the cutting rod over the visible side of the tile, firmly securing it and making sure the incision wheel is just over the cutting line marked.
3. Make a pre-incision in each one of the ends, 1-2 cm from the inside to the outside of the tile.
4. Make a complete incision from one end to the other without stopping and with a constant cutting speed and constant pressure.
5. Move the tile over the work bench, making sure the incision line exceeds the bench by 10-15 cm.
6. The slab will be almost cut already. Separate both sides of the cut with the clamps. Two people should do this together when the cut tile format is large.
7. Cut the reinforcement mesh with a cutter.
8. Remove any sharp edges, bevelling with diamond discs or abrasive sandpaper.

5.2 NON-RECTILINEAR MANUAL CUTS

Trace the cutting line with a pencil. Use a grinder with diamond bits to cut the tile. Making these types of cuts on site is recommended only when working on small jobs.

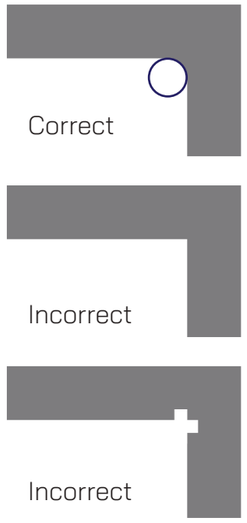


5.3 PERFORATIONS

Position the tile over a flat, stable surface.

Begin making the hole with a diamond crown bit with an angle of approx. 75º with respect to the slab.

Make the hole by carefully swaying the tool, making sure the cutter constantly cools down.



5.4 L-CUTS AND BOXING

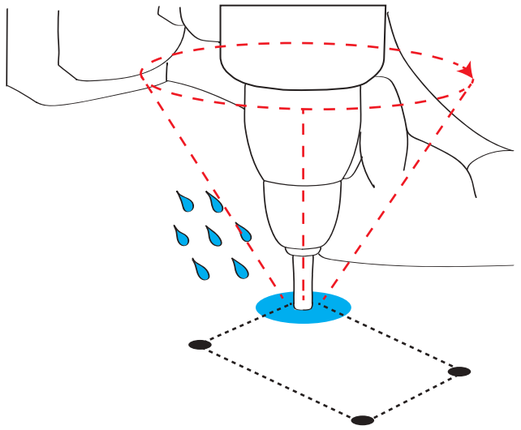
These are critical points. Doing them correctly will prevent breakage and cracking.

Leave a radius of more than 3 mm in any inner L-cut. The bigger the radius, the stronger the piece will be. For these points, also respect the corresponding seams indicated on the successive points.

Position the tile over a flat, clean and stable work surface.

The holes for electrical sockets must be opened at a minimum distance of 5 cm from the tile edges. Once the hole measurements are delineated, begin perforating on the visible side of the tile. Make drill holes (without the hammer mode) with diamond cutters (diam. 6-10 mm), swaying the drill and making sure the tool is constantly cooled with water.

Make the holes in the four corners. To open the hole, make straight cuts between the holes with a diamond disc cutter with a small diameter.



06 MECHANICAL PARAMETERS

Preliminary information

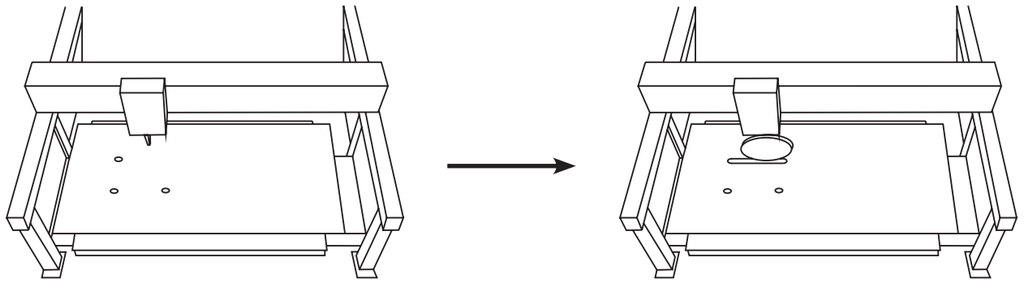
Before working with the slabs, always make sure the entire slab is supported on the bench and the bench is free of any shards. The slab must be completely flat.

To release any strain on the raw slab before handling, we recommend correcting the edges by cutting approximately 2 cm from each side.

Recommended sequence for strain release cutting:

Due to the hardness of Vicostone material, the disc cutter should be suitably cooled. The cooling jet must be continuous and always target the cutting point where the disc cutter will be in contact with the slab:

Sink holes: before making the cutouts, you should drill the corners of the holes using a bit with a radius of at least 5 mm.

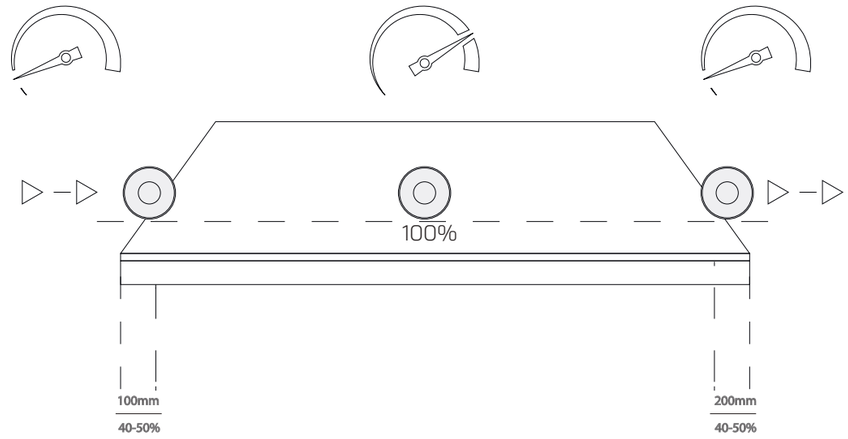


6.1 CUTTING WITH A DISC CUTTER

We recommend cutting Vicostone slabs with a segmented disc cutter. The cutting parameters are as follows:

Disc	RPM	Forward speed (m/min) for 6/12/20 mm thicknesses	
		Straight cut	45º cut
300 mm	As per the manufacturer	3/2,5/2	1,5/1/0,7
350 mm		3/2,5/2	1,5/1/0,7
400 mm		3/2,5/2	1,5/1/0,7

These speeds should be reduced by 50% at the beginning and end of the cut (approximately 15-20 cm at the start and end of the cut):



6.2 PARAMETERS FOR CNC TOOLS

Vicostone slabs can be cut using computer numerical control (CNC) machines.

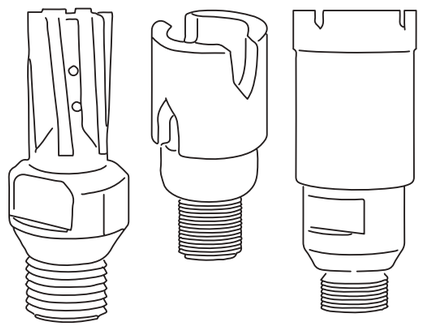
The most complex CNC machines offer the option to rotate and tilt the cutting head for numerous types of cuts. CNC is normally used after shaping the upper part with a disc cutter or hydrojet.

These machines are mainly used to cut out sink holes and for finishing off the edges of flush countertops, holes, edges and curved lines. The tool must have a diamond tip to process porcelain tile. Your choice of machine will depend on the specific process to be performed.

Do not make cuts or holes while the machine is oscillating. It is important to use plenty of water aimed in the right direction while cutting, both inside and outside of the machine.

The drilling tool must go 1mm deeper than the thickness of the slab.

Tool	RPM	Forward (mm/min)
19-22 mm cutter	4500-5500	150-250
35 mm drill bit	3500-4000	10
Router bit	6000-9000	400

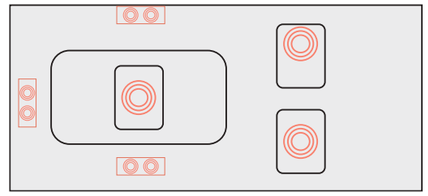


Positioning suction cups

Before starting the process, check that the suction cups are correctly positioned on the rear of the slab.

If anchorage is insufficient, use softer joints of a suitable thickness.

Correct placement of the suction cups holding the slab is fundamental to obtaining a good cut. Suction cups should therefore be spread evenly so as to hold the slab, including any part(s) to be removed. If this is not done, the part of the portion already cut could bend and lead to cracking before the process is concluded.



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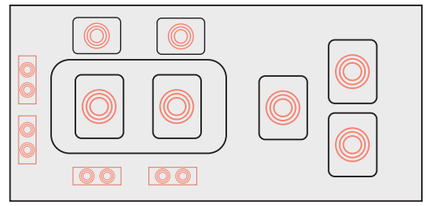

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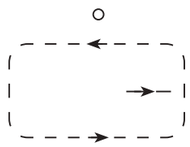
Clamps can be used instead of suction cups, in which case it should be remembered that the clamp side cannot be cut.

Cutout cutting diagram

Make cuts as shown in the diagram below, without cutting into the hole perimeter at 90º, as this will compromise quality in the final process.



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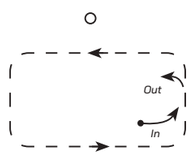

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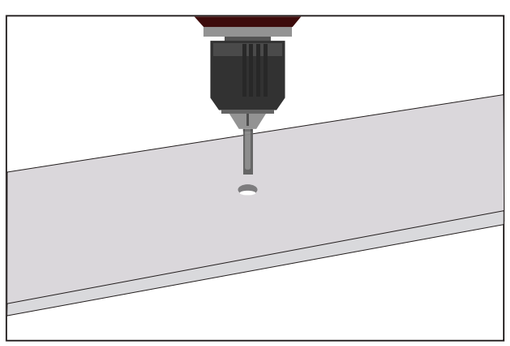
Flush process

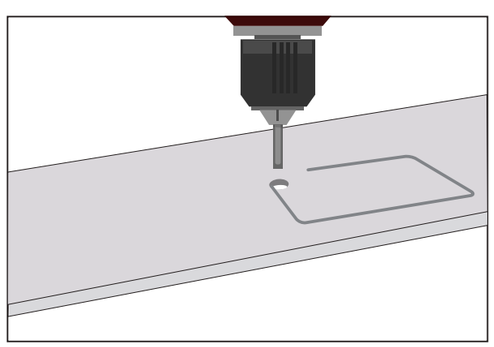
We recommend concluding the countertop flush process before proceeding to cut.

A maximum rabbet of 4 mm can be cut in a 12+ Vicostone slab and 8 mm in a 20+ Vicostone slab, with suitable sizes and depths based on the instructions contained in the technical data sheet for the sink or apparatus to be installed.

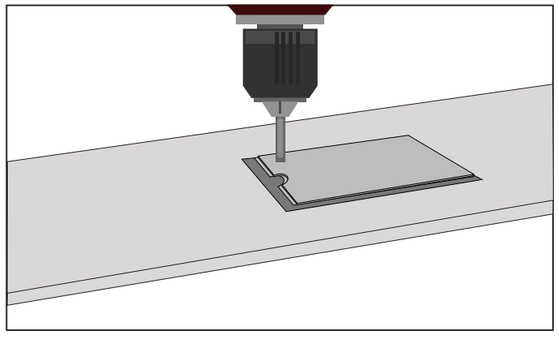
Cutting parameters



Drilling



Edging



Cutting

6.3 MANUAL PROCESSING

A manual cutting tool can be used to cut 12+ and 20+ Vicostone slabs.

By using such accessories as cutting discs, diamond bits or abrasive pads of various grades, it is possible to obtain cuts, holes or finishes for edges or details on the surface of countertops.

The slab being processed should be suitably positioned to prevent movement and vibration. The area being processed and the tool being used should be constantly bathed in water to ensure proper cooling and process quality.

Post-processing Cleaning

Cutting, drilling and similar operations lead to dust residue caused by material abrasion. This residue tends to solidify on the surface once the water needed during the processing stage dries.

Correct cleaning is therefore essential after the processing stages because if this is done incorrectly it can produce marks that are difficult to remove (especially visible on darker colours).

Clean processing residue from the slab surface with plenty of water and then dry it with a paper cloth. Repeat this operation until it is clean. Avoid storing processed material that is still wet.

Polyurethane or epoxy adhesives are used when assembling the countertop and creating the edges, suspended sinks, etc. Epoxy products have been designed not to unstick, thereby guaranteeing long-term performance. For this reason, they could stick to the surfaces without being absorbed and make removal difficult or even impossible.

It is therefore essential to remove them quickly using sponges or soft cloths and the cleaning products recommended by the suppliers. Avoid contaminating the rest of the surface with cloths/sponges used to remove this material. Do not move the finished surface wearing gloves that are dirty with adhesive products.

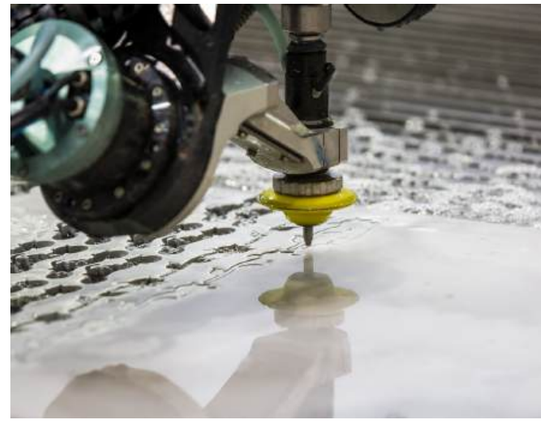
If any epoxy/polyurethane material is observed after installing the countertop, it will need to be treated with basic products and soft sponges. However, it may not always be possible to completely remove this material as it will have completely dried.

4.4 Waterjet Parameters

The entire surface of the slab must be supported on the ribs of the waterjet. The ribs must be as close as possible and must be in perfect conditions.

For perimeter and outer cuts, first discharge water off the slab. Then, make the first hole in the slab at 700 bar pressure for 10 seconds. After that, increase the pressure to around 3900 bar to begin cutting.

If the machine software and design allow, finishing the cut as close as possible to the edge of the slab is recommended.



Other recommended parameters:

Head	0,88 mm
Abrasive flow rate	500 gr/min
Cutting speed (6 mm+)	1,8-2,4 m/min
Cutting speed (12 mm+)	1,2-1,8 m/min
Cutting speed (20 mm+)	0,6-1 m/min

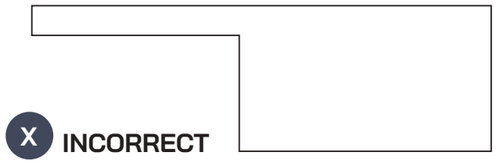
07 WORKTOP DESIGN RECOMMENDATION

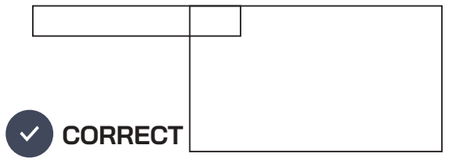
7.1 DESIGN AND SHAPES

Certain recommendations should be followed when designing a countertop. Here are a few cutting, design and architecture tips to help reduce problems caused by breakage, cracks or deformations in the final product.

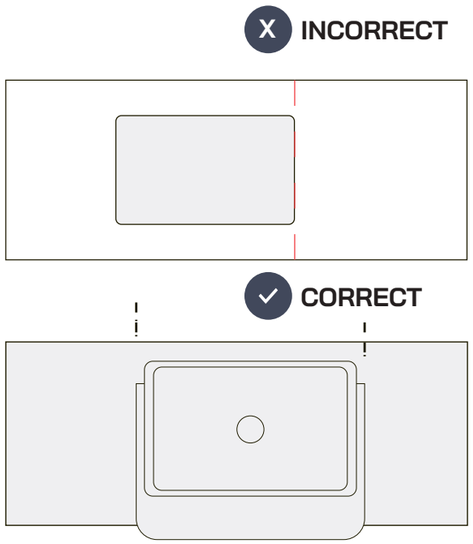
Vicostone recommends using 12 mm and 20 mm thick material when producing countertops.

If the countertop design allows, avoid Vicostone countertops with unbalanced weights:





Irregular cuts are also not recommended such as for a “farmhouse sink”. In these cases, add joints to the countertop design:



7.2 PLANNING

General Considerations

To the extent possible, the following indications must be observed:

- Make sure the support is in the final position
- Measure and project the size, shape and location of the surface. Measuring precision is essential for proper production and installation.
- Plan production with rectangular pieces that are as big as possible with the least amount of slab waste.
- Pre-mark the furniture with the location of any joints to be placed on the countertop. Joints should be placed on complex seams. Check that the surface is even in the places where joints will be added.
- Check the location and available space for any accessories to be placed in the countertop considering the distance between them and the areas around them.
- Do not cut visible edges on the countertop in accordance with slab edges given that the raw slab edge is not appropriate as a final slab edge.

Graphics

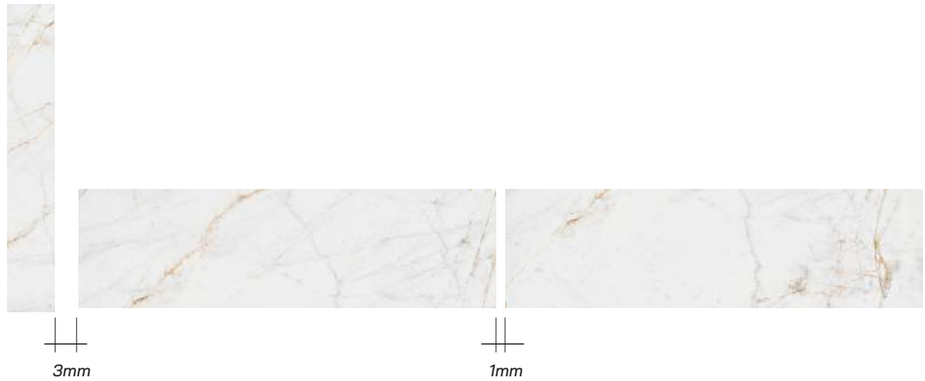
If the project includes the use of several slabs, check the graphic orientation of the material.

If several slabs are to be used for graphic continuity (bookmatch effect, for example), pay attention when cutting the pieces that will be joined together. As occurs with natural stone, this type of work may show slight isolated deviations in the graphics even when done properly. Vicostone will not accept claims for this reason.

7.3 JOINTS

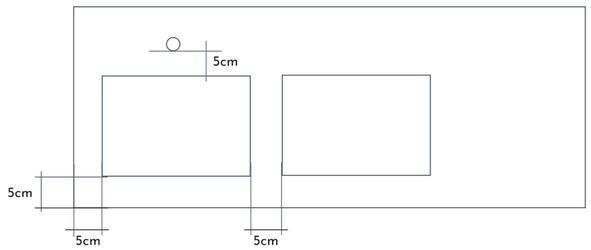
An empty space of at least 3 mm between the product and the supporting wall and approximately 1 mm between juxtaposed slabs must be planned during the work as expansion joints.

Due to the nature of Vicostone slabs, micro-bevelling is recommended for all joints.



7.4 DESIGNING HOLES FOR SINKS AND HOBS

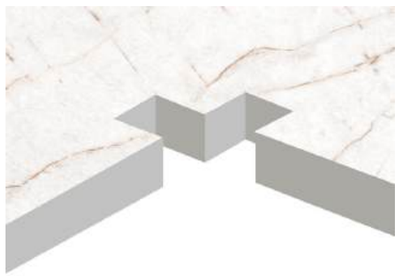
The minimum distance allowed between holes or cutouts and/or from the edge of the slab is 5 cm.
If a gas hob is being used, leave 8 cm between the hob cutout and the backsplash.



The inner angles of the cutouts must have a constant radius of 5 mm.

If cutting with a grinder, drill holes must be made in each of the corners with a 10 mm drill bit prior to the cuts on the straight sides.

X INCORRECT



X INCORRECT

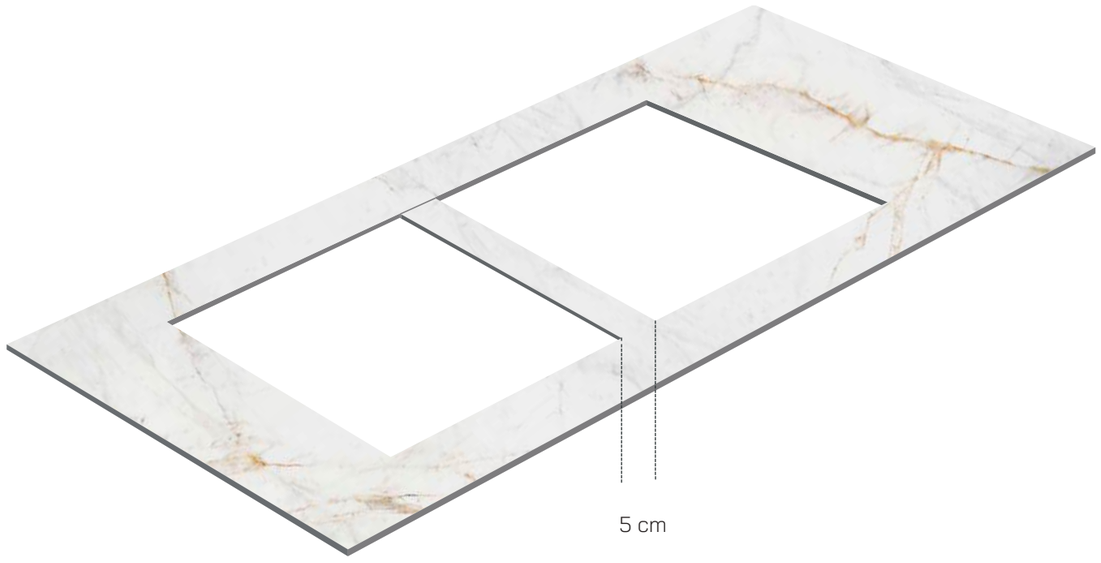
X INCORRECT

CORRECT

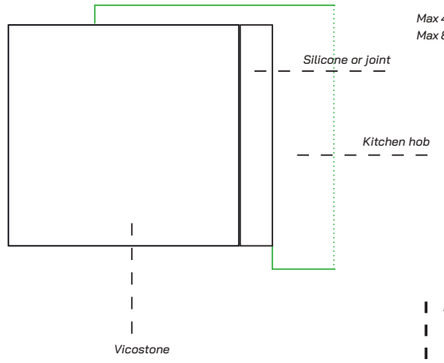
After cutting, the edges of the cutouts for vitroceramic hobs, sockets or switches are often a bit sharp or irregular; therefore, bevelling them with special diamond or abrasive sanders is recommended.

It is recommended to polish the edges of the cutout to eliminate any microcracks created when cutting. The more intense this treatment is, the less risk there will be in the future.

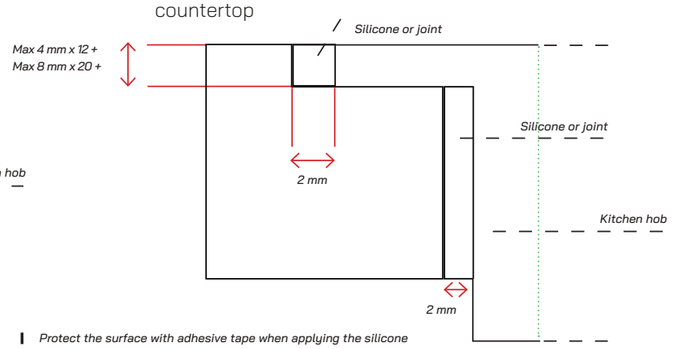
If large-size cutouts are planned (more than 70 cm), place a pre-cut bar approximately 5 cm wide in the centre of the opening in the direction of the depth (which must be removed after installation) to make any movement in the piece less critical.

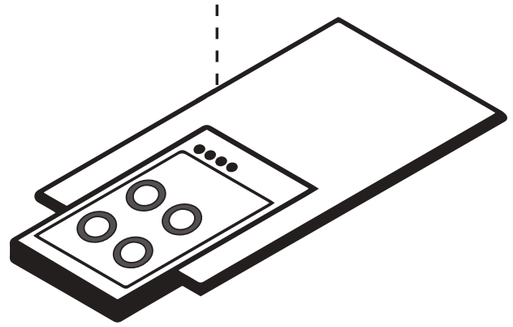


Kitchen hob over the countertop



Kitchen hob flush with the countertop



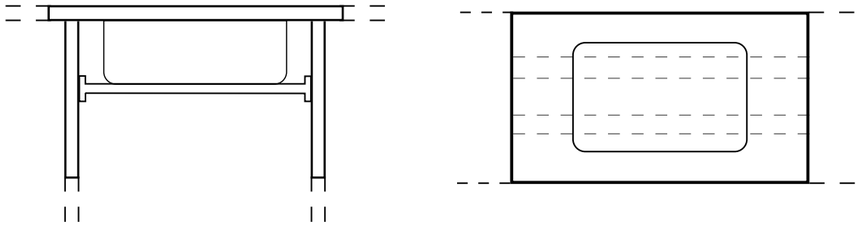


Processing Vicostone 12+ and 20+ slabs to create holes for installing sinks or electrical appliances should only be done after a careful assessment of the processing measurements indicated in the data file for the product to be installed based on the installation method.

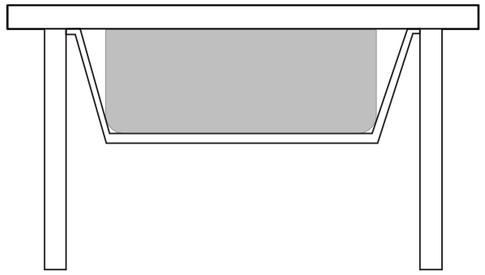
A minimum distance of at least 2 mm is required between the kitchen hob and the Vicostone slab for the purpose of thermal dilation unless the device manufacturer indicates a larger distance. The gap should be filled with a suitable sealant.

Regardless of the type of sink being used in the project, support bars or other similar systems should be anchored to the unit structure to support the weight of the sink and the water it may contain so that it does not depend on the slab.

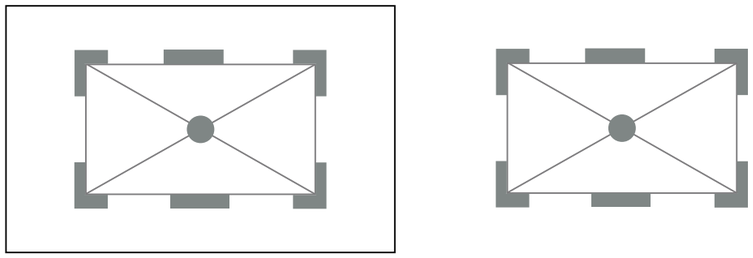
Regardless of the type of sink being used in the project, support bars or other similar systems should be anchored to the unit structure to support the weight of the sink and the water it may contain so that it does not depend on the slab.



If the base has sliding drawers, these supports should have the proper shape so they can slide correctly:



Depending on the project (such as repeated grooves in close proximity), assess the possible need to reinforce the cut-out perimeter by applying an Vicostone profile with a suitable adhesive underneath the countertop.



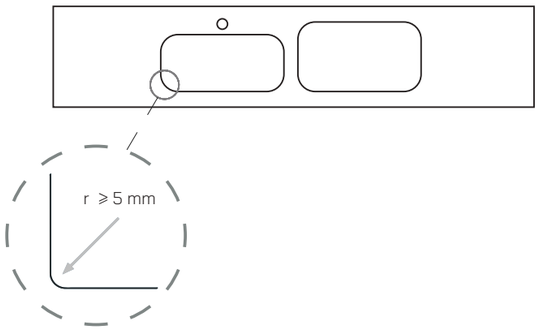
The Vicostone 12+ and Vicostone 20+ slabs can be processed to obtain different configurations for sinks and kitchen hobs.

Inside corners

To create inside open corners, make an adjustment based on a minimum radius equal to 5 mm in order to distribute tension in the same way you would normally when processing natural stone, marble and compound stone.

We do not advise creating right-angle inside corners (90º).

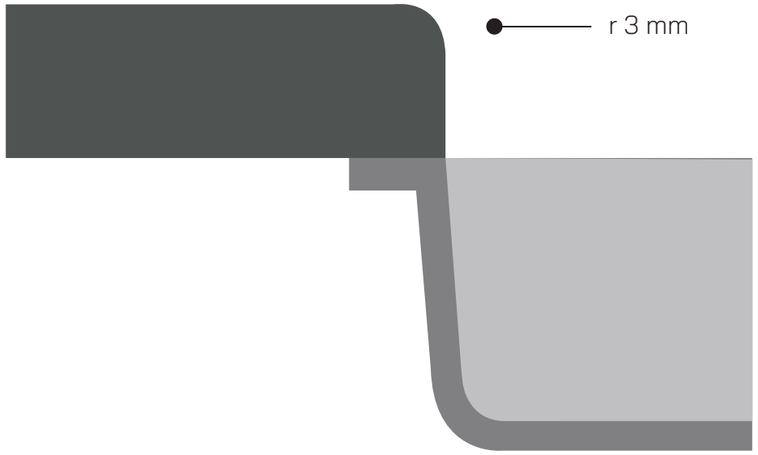
As for all stiff materials like marble, natural stone, quartz agglomerate and glass, it can be done under operator liability based on their own personal experience and using processes that the operator has tested and considers suitable.



7.5 SINKS AND HOBS

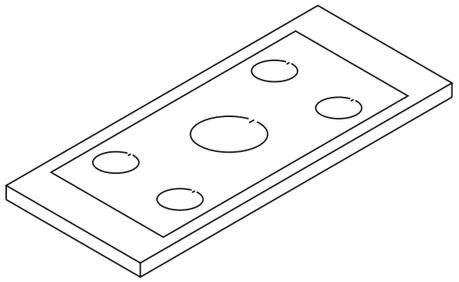
Undermount sinks

To reduce the risk of splintering at the edges to a minimum, a round edge or even a corner cove edge with a radius of at least 3 mm is recommended.

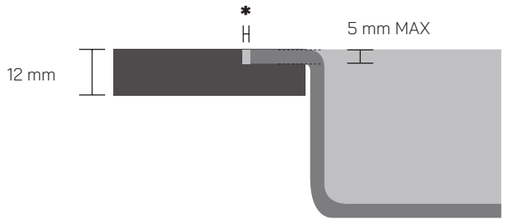


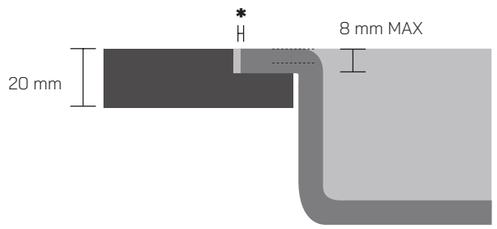
Flush sinks and hobs

Flush sinks and induction or vitroceramic hobs supported on rabbets made on the surface of the countertop are only recommended for 12 mm and 20 mm thick countertops with the following maximum rabbet depths:

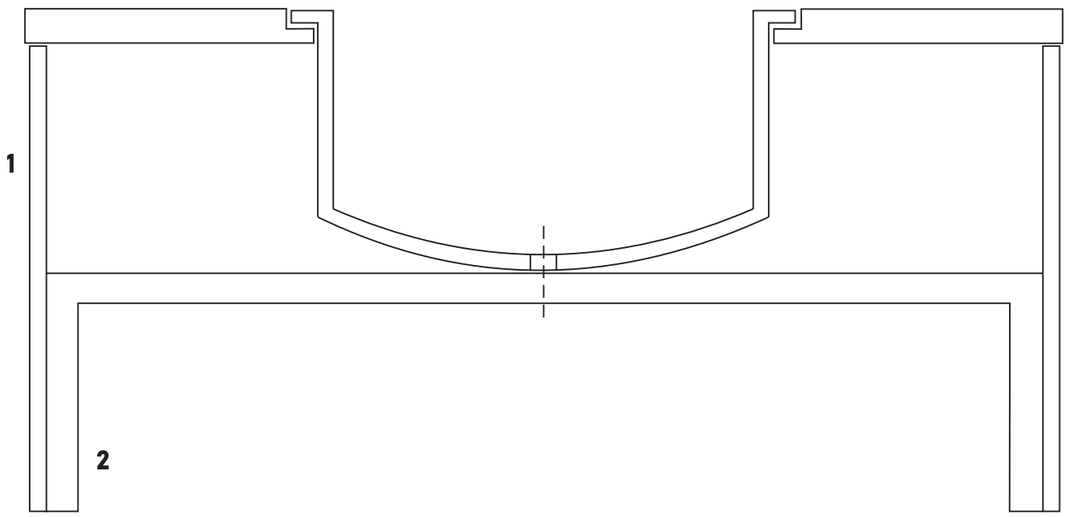


Slab thickness	Maximum rabbet depth
12mm	5mm
20mm	8mm





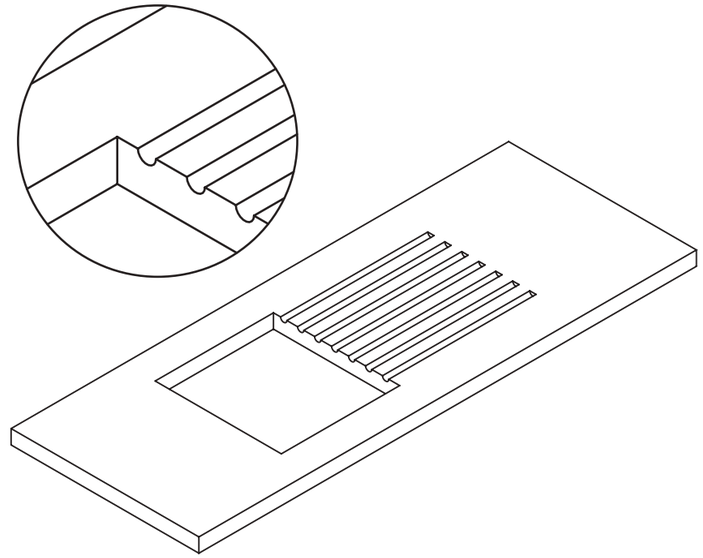
For large-size sinks, you might need to place a supporting rod under the sink:



Draining grooves

The best result for this work is achieved in full body materials where the finish on the grooves looks just like the normal slab surface. Considerations for this type of work:

- Procedure: create the rabbet based on the instructions provided in the section of this manual entitled “Cutting Parameters and Recommendations”, starting from the hole for the sink. Sand the grooves by hand to remove any marks left by the router bit. Finally, treat the grooves with a sealant to prevent water absorption in that area.
- The depth of the channels must be limited to 25% of the thickness: 3 mm for 12 mm and 5 mm for 20 mm.
- The minimum distance between grooves should be 1 cm.
- Furthermore, the grooved area will need additional reinforcement on the back of the slab.



Please note that when making the grooves, the base color of the materials will be visible, which may contrast with the surface design and color in some materials.

Fabrication

Always start from the sink hole. Never lower the cutter directly onto the surface. During the first two runs, remove 0.5 mm; after that, a maximum of 2 mm can be removed per run.

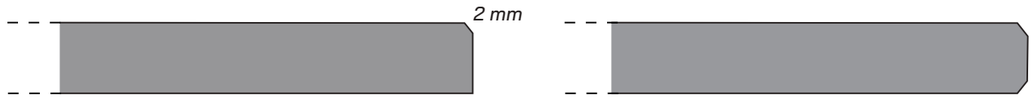
7.6 EDGES

Edge finishes can be obtained by processing with automatic machinery (polishers, numerical control machines) or by hand, depending on the desired effect.

Straight and bevelled edges

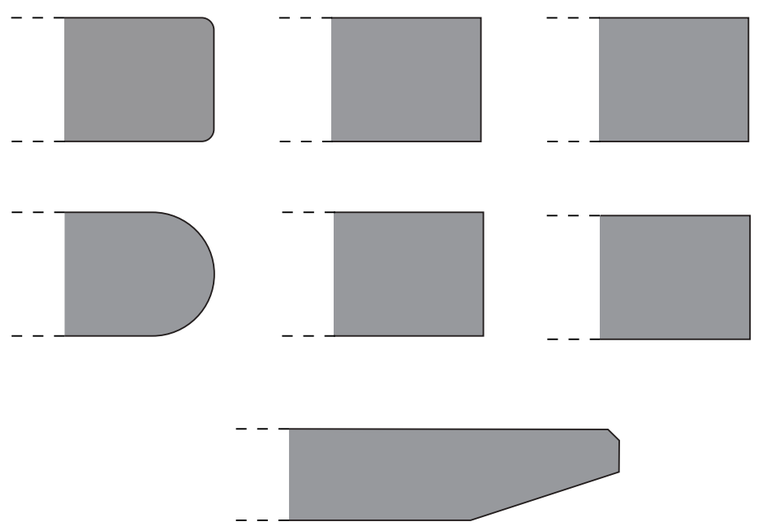
The straight edge is the finish that enables the edge of Vicostone 12+ and Vicostone 20+ slabs to be shown. This is usually used for the perimeter edge of the surface of countertops and kitchen panels, or as the finish for a hole when installing the sink beneath the countertop.

If required, the edge can be polished subsequently using a sequence of increasingly finer abrasive diamond grinders on CNC machines. We suggest creating a bevelled edge of at least 2 mm to increase edge strength in the event of accidental impact. For curved bevelling, a CNC machine with a grinder on 5 axes will be necessary.



Other edge types

Other edge types can be obtained (such as the bull's nose and half bull's nose) using angle grinders with specific profiles on CNC machines. As a result, several different edge finishes can be obtained using different angle grinders. The working speed should be checked as a precaution.

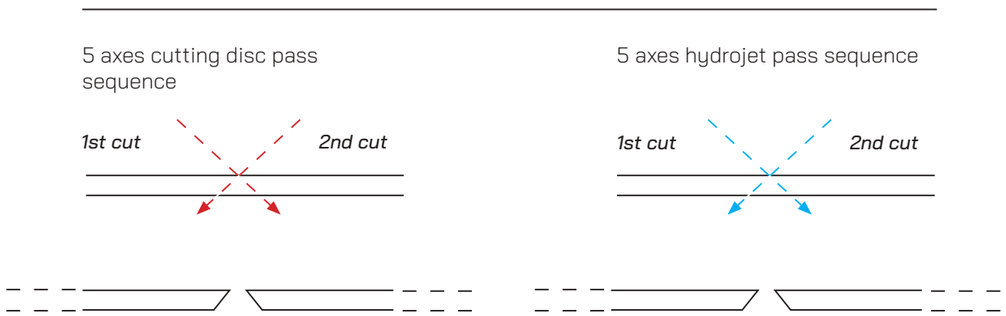


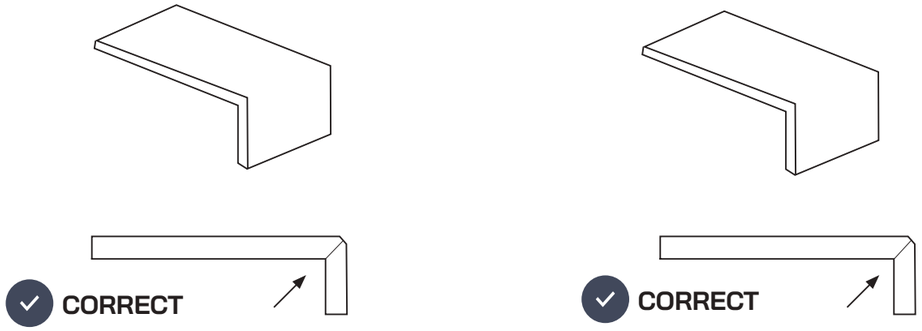
Mitered edge and structures

Vicostone 12+ and Vicostone 20+ slabs can be processed to obtain continuous joints, which can then be used to create slabs of heights greater than the product thickness, sinks and other structures. This solution is also adopted when graphical continuity is desired on the front countertop panel.

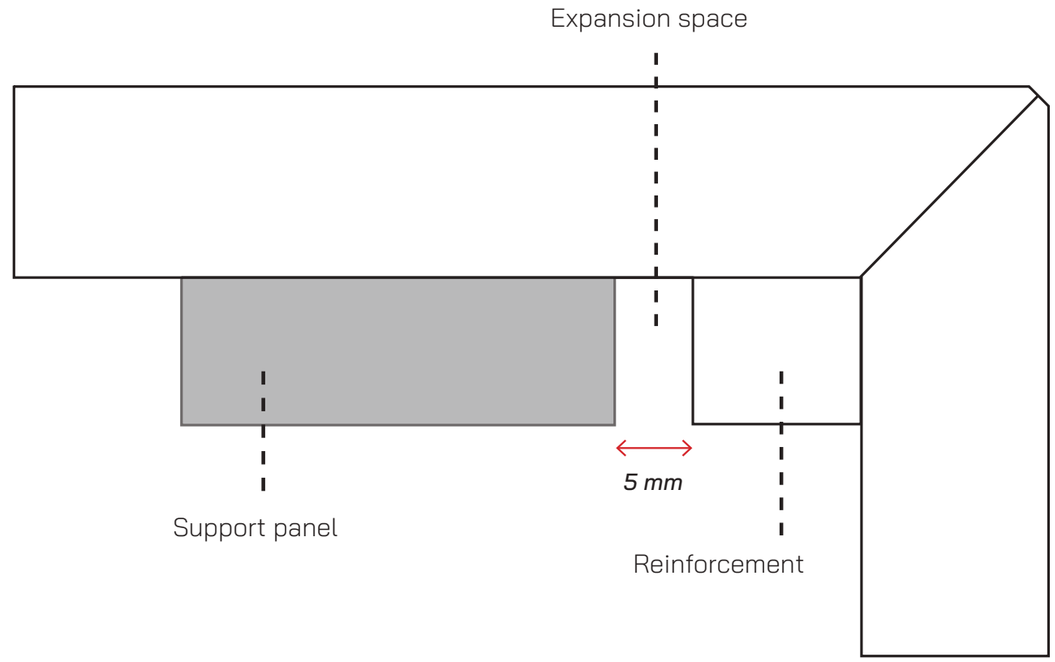
After creating the pieces to be used, we recommend protecting the adjacent surfaces with plastic film or adhesive tape to prevent the slab being stained with glue because the adhesives will be difficult to remove once dry.

Clean the sections to be glued and apply an even layer of the adhesive over the entire surface. Make sure that the sections remain in position until the glue has completely dried, following the manufacturer's instructions. Once the glue has completely hardened, create a bevel of at least 2 mm.





We suggest reinforcing the joint by applying profiles made from unused parts of the Vicostone slabs secured with the same type of adhesive as that used to glue the mitered edge.



We recommend using two-component adhesives (generally epoxy-based or equivalent), which are widely available in the market.

These adhesives can be pre-coloured or transparent, and specific colour additives can also be used with them. A selection of products available in the market is shown below. Several companies have coloured glue or adhesive products in their range that can be combined with Vicostone finishes.

Ask the manufacturer directly about suitable products.

We recommend proper and immediate cleaning of all glues and adhesives used, based on the manufacturer's instructions. Removing any glue later that has dried might be impossible and would lead to the formation of halos on the slab.

Fibre abrasion

The fibre reinforcement in the visible part of the countertop edge can be removed, either manually or using cutters, to improve the appearance. Because this is a fibreglass material applied with a polyurethane adhesive, this process should be carried out in accordance with applicable national safety regulations.

7.7 SUBSTRUCTURE AND INSTALLATION

The 12 mm and 20 mm (with reinforcement mesh) thick Vicostone slabs do not require adhesive on a continuous structural support even though it is common practice.

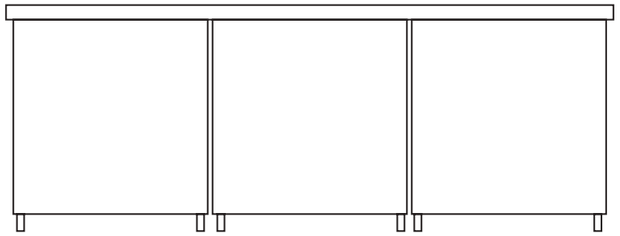
The support material must be rigid, dimensionally stable for the conditions of use and have a thermal expansion coefficient that is similar to the slab. For outdoor countertops, do not use wooden supports or any recycled materials or materials with a thermal expansion coefficient that is too different from that of the ceramic material (6-7 M°K-1).

The countertop surface must be perfectly supported as any unsupported point may weaken the piece produced. Therefore, never apply isolated drops of silicone but rather extend the adhesive all across the supporting area.

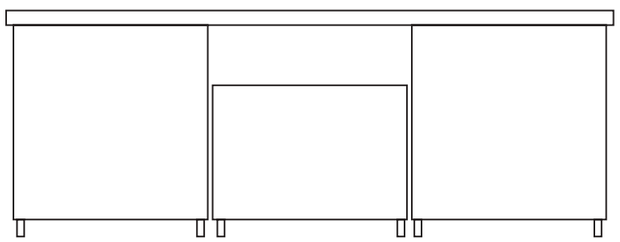
12 mm thick slabs must be fixed to a base (total perimeter of the perfectly aligned furniture or substructure) in a 600 x 600 mm square.

20 mm thick slabs must be fixed to a base (total perimeter of the perfectly aligned furniture or substructure) in a 900 x 900 mm square.

Continuous surface reinforcements such as an integrated board on the furniture should be placed on countertops with straight edge designs where the substructures cannot be hidden.



CORRECT

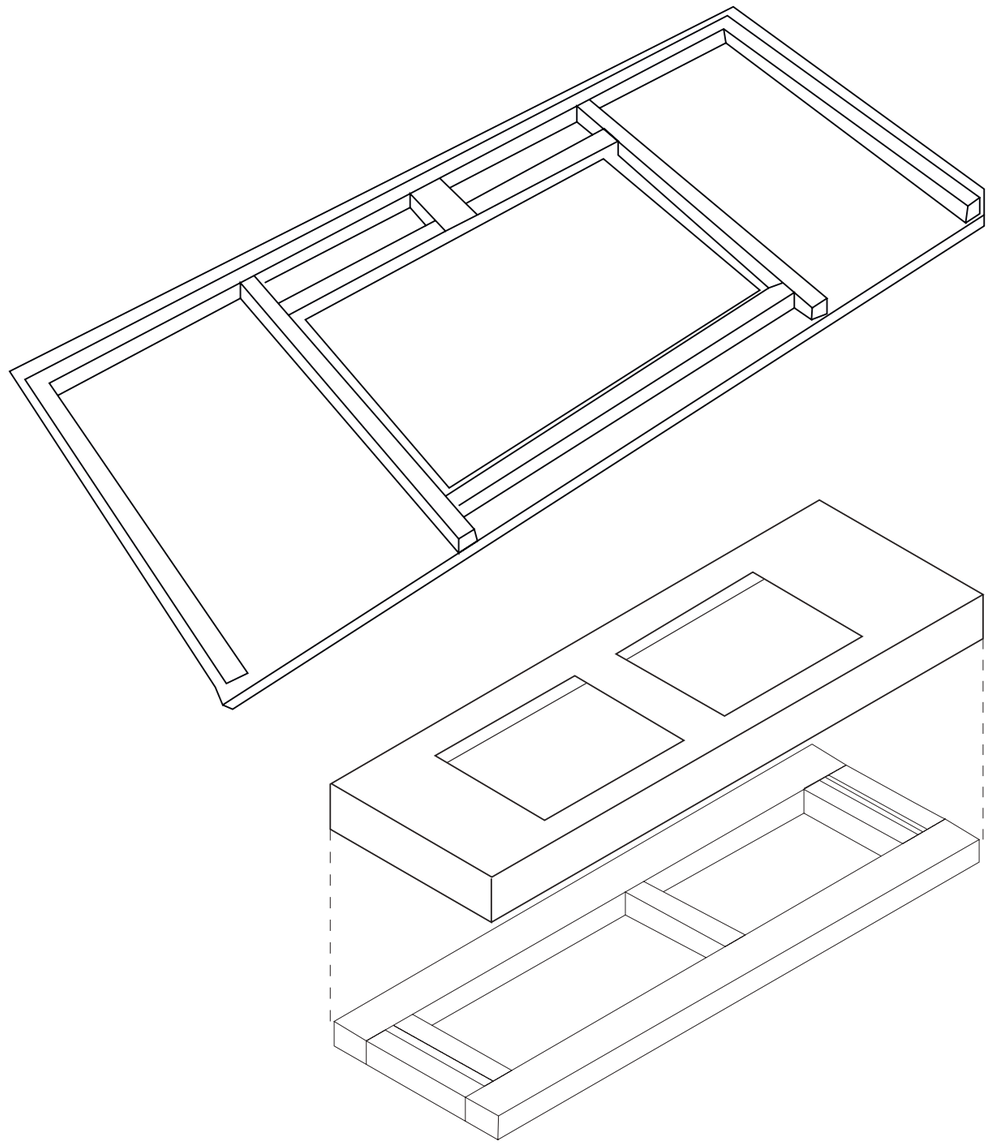


INCORRECT

7.8 REINFORCEMENTS

These reinforcements are important because they give the countertop more rigidness and stability. The reinforcements must be distributed all along the perimeter so they are directly supported on the sides of the kitchen furniture. For tap holes, wooden or similar reinforcement is recommended as it will distribute the tension generated during daily use.

For countertops with mitered edges, the edge reinforcements must be made with the remains of the slab used or dense granite. Do not use reinforcements made of other materials (quartz, for example) as the thermal expansion may cause curling or openings in the edging.



7.9 OVERHANGS

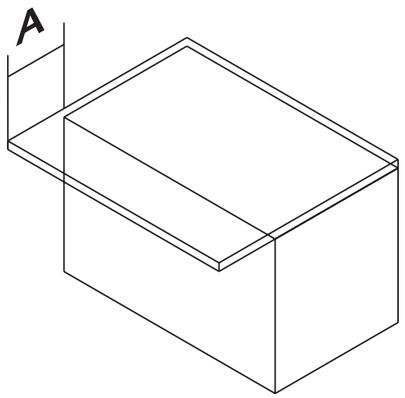
Vicostone slabs in 12 and 20 mm thicknesses allow for overhangs.

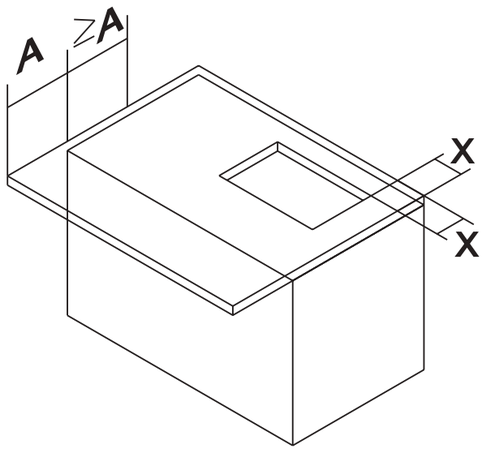
Overhangs are not recommended when there are cutouts or holes in the slab at least 15 cm from the edge of the furniture; for holes or cutouts at a distance of 15-60 cm from the edge, the length of the overhangs must be reduced by 50% with respect to the following indications.

Vicostone recommends:

SINGLE OVERHANG

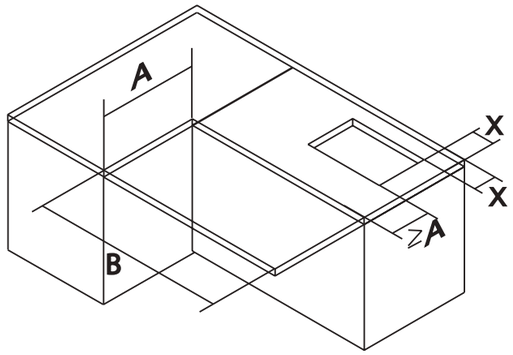
Thickness	12 mm	20 mm
	A ⩽ 35 cm	A ⩽ 45 cm





SINGLE OVERHANG WITH A CUTOUT

Thickness	12 mm	20 mm
	A ⩽ 35 cm	A ⩽ 45 cm
	X ⩾ 10 cm	X ⩾ 10 cm

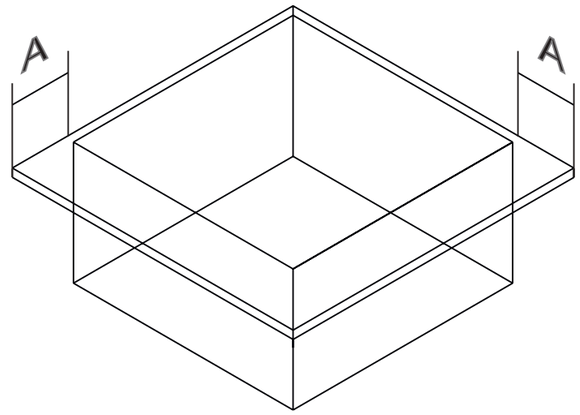


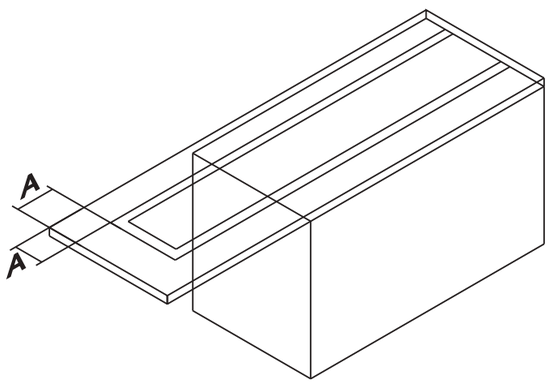
PARTIAL OVERHANG

Thickness	12 mm	20 mm
	A ⩽ 15 mm	A ⩽ 30 mm
	B ⩽ 80 cm	B ⩽ 100 cm
	X ⩾ 10 cm	X ⩾ 10 cm

DOUBLE OVERHANG 1

Thickness	12 mm	20 mm
	A ⩽ 25 cm	A ⩽ 35 cm





DOUBLE OVERHANG 2

Thickness	12 mm	20 mm
	A ⩽ 30 cm	A ⩽ 40 cm

08 HEAT

Maximum temperature: 300 ºC
Linear thermal expansion: 5.7 • 10-6 °C-1
Test: Thermal shock resistance (ISO 10545-9); Dry heat resistance (EN 13310)

Vicostone slabs can be built in to barbecues and fireplaces for use as Vicostone cladding and countertops. The following factors should be taken into consideration:

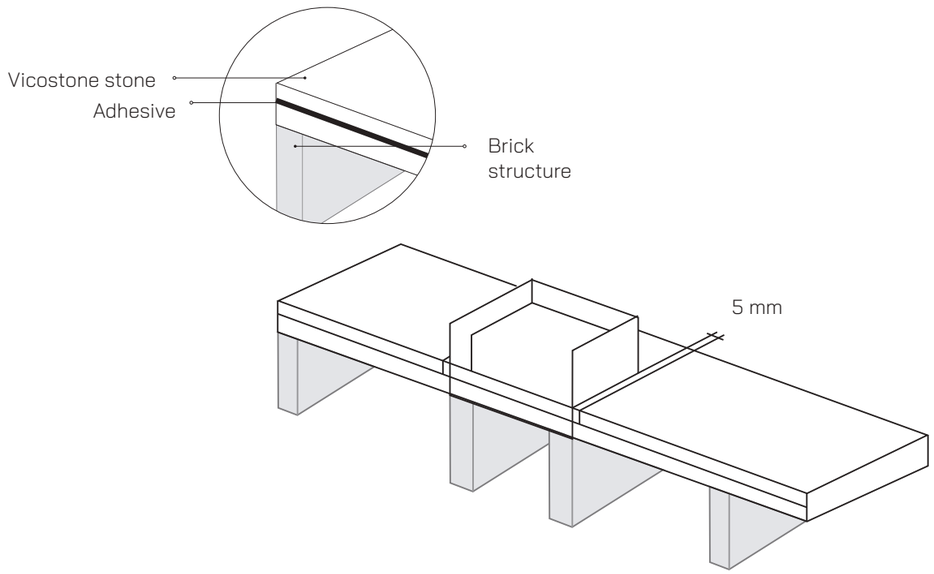
a) Always consider how each material expands when subject to changes in temperature. Metal materials expand much more than Vicostone, so avoid direct contact and leave enough space between them (which will depend on the dimensions, maximum temperature, etc.). Generally speaking, we recommend leaving gaps of 10 mm to prevent breakages caused by this expansion.

b) Whenever possible, create the countertop in several pieces to avoid inside corners. Alternatively, we recommend an inside radius equal to or greater than 10 mm, polishing the edges of the hole to prevent possible microcracks caused by the cutting process.

c) Do not apply the material in direct transmission from the heat source, whether through contact, radiation or ventilation. For example: internal wall tile in the cooking or combustion area, underneath grills, braziers or heating systems.

d) Always protect the material with a refractory wall or insulation to dissipate the heat. We recommend also paying attention to all elements that may heat up, such as the brazier, the ventilation conduit, traditional apparatus, etc.

Examples: Barbecue station. We recommend leaving a space of at least 10 mm from the grill/ barbecue and filling it with a thermal insulation material, such as fibreglass thermal insulation tape. We recommend joints on the inside corners.

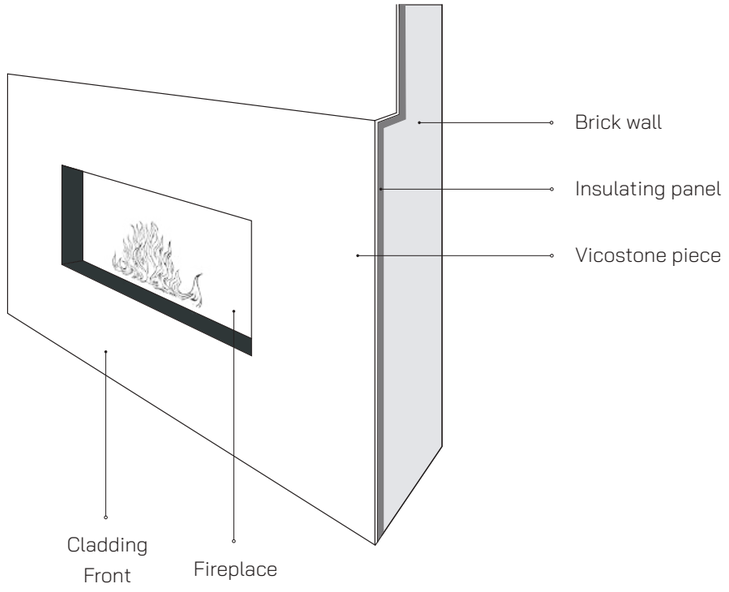


Fireplaces

We recommend leaving a space of at least 5 mm between the fireplace and the Vicostone piece, and filling it with a thermal insulation material such as fibreglass thermal insulation tape.

FIREPLACE CLADDING APPLICATIONS

- **Front and side outer cladding:** separated from the heat by a layer of insulation or refractory wall (fire-resistant).
- **Outer side cladding:** separated from the heat by an internal refractory wall.
- **Countertop unit**



09 ADHESIVES

The 12+ and 20+ Vicostone slabs do not usually require reinforcement with other materials.

It may be necessary to glue the slabs, mainly if there is a perimeter panel, to create a filling and a uniform horizontal surface. Adhesives are used when joining Vicostone slabs on countertops, the colour of which should be compatible with the body colour of the Vicostone material used. Please note that the surface colour of some Vicostone models is not exactly equal to the slab body. This is important as the body colour is exposed upon polishing the edges.

The different manufacturers of adhesives for this use recommend their own products that most closely match the colours of Vicostone models.

For more information on adequate colours, ask your sales representative or your adhesive supplier. The choice of glued material, the glue to be used and the application frequency are up to the installer and their responsibility. They should be checked according to their suitability for the countertop in question, the materials being used and what they will be used for.

10 INSTALLATION

10.1 PRELIMINARY CONSIDERATIONS

The support on which the slab will be installed is of vital importance to proper installation and proper functioning of the wall tile over time. Before beginning the installation, check that the support has these characteristics:

1. It is dry and the surface is free of paint, grease, resin, dust and, in general, any loose particle.
2. It is compact and has the mechanical resistance required for the intended use.
3. It is stable after completely setting and settling. There must not be any cracking. For unstable supports and floor slabs or any with light fissures, using an anti-fracture mesh between the support and the tiling is recommended.
4. It is flat. To install large-format Vicostone slabs, fill in the level differences using adequate leveling products.
5. It has been made with the necessary perimeter and expansion joints.

10.2 APPLYING ADHESIVE

Handling Vicostone slabs with suction frames will be necessary in most cases. Check that the suction cups are tight before moving the slabs. Cleaning and dampening the suction cups before attaching them increases the attachment to Vicostone slabs.

To apply fast-drying cement, position the slab fixed to the suction cup frame, rotating the slab facing down. A flat work bench will be required where the frame can rest without deforming or arching the slab. Once the slab is secured in a horizontal, flat position, the back of the slab must be cleaned to remove any dirt that may affect the adhesive adherence.

10.3 DOUBLE GLUING

Adhesive must be applied using the double gluing technique; in other words, on the back of the Vicostone slab and on the support.

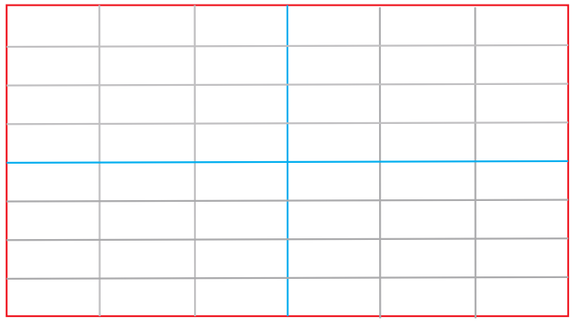
Using a 3-4 mm flat notched trowel on the back of the slab is recommended. Then, use a 10 mm slanted notched trowel with the support. Try to cover all corners and edges and avoid air pockets between the support and the piece of slab.

Position the slab in the desired location and hit the slab with a rubber hammer to remove all encapsulated air between the layers of adhesive. For best results, extend the adhesive on the tile and on the support with the trowels in the same direction, preferentially parallel to the shortest side of the slab to make it easier to get all air out when hitting with the hammer.

Double gluing is necessary so the tension caused by support expansion and movement is evenly distributed over a larger area.

10.4 JOINTS

Vicostone slabs in 6 mm thickness are supplied rectified. Added to the low thermal expansion in the material, this means thick joints between pieces and at meeting points with other construction elements are not necessary. Even still, the installation of joints is necessary to prevent breakage or unsticking due to the behaviour of the support. There are several types of joints:



LEGEND

Grey: Installation joints

Blue: Expansion joints

Red: Perimeter joints

As an expansion joint, an empty space of at least 3 mm must be provided between the product and the wall against which it rests, and approximately 1 mm between juxtaposed boards during construction.

Due to the nature of Vicostone boards, a micro bevel is recommended for all joints.

10.5 GROUT LINES OR INSTALLATION JOINTS

Or the habitual joints between two Vicostone pieces. It is necessary to absorb the tension transmitted to the wall tile and spread the steam in the lower strata of the system. They must be 2-3 mm thick in interiors and at least 5 mm thick outdoors, whenever the support is stable.

10.6 EXPANSION OR AREA JOINTS

Joints that only affect the wall tiling, designed to divide the total area to be tiled into smaller regular sub-areas to absorb the expansion and contraction of Vicostone tiles. For indoor floor tiling, they must be at least 5 mm thick and delimit a maximum area of 40 m^2.

For outdoor floor tiling, they must be at least 8 mm thick and delimit a maximum area of 12 m^2.

Expansion joints must also be used in door passages and thresholds, coinciding with the floor slab joint. Even in contiguous rooms where there is a change in flooring, different tensions may arise in the floor slab. Therefore, an expansion joint is necessary.

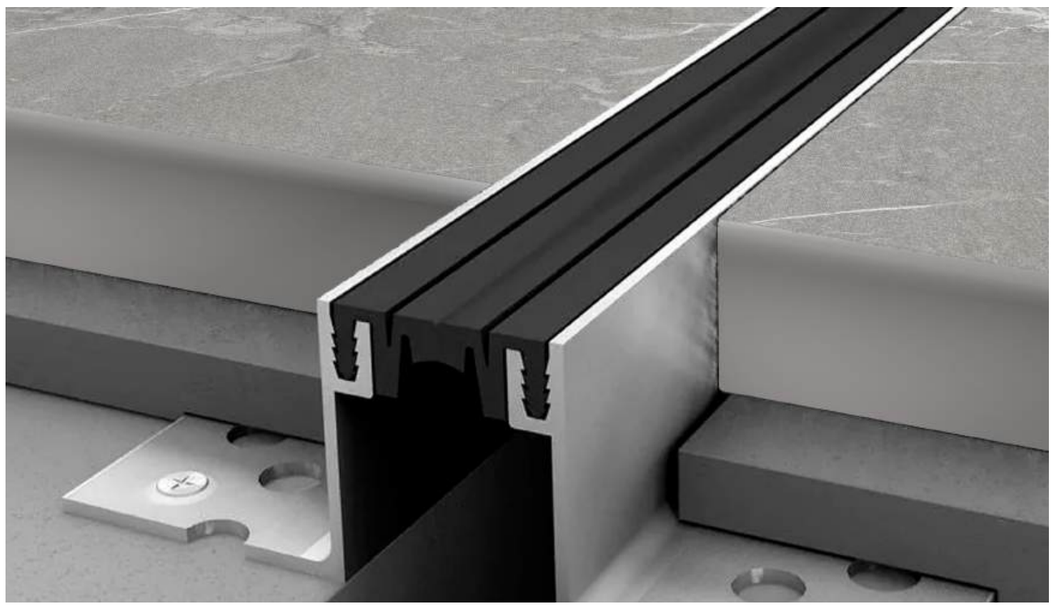
10.7 PERIMETER JOINTS

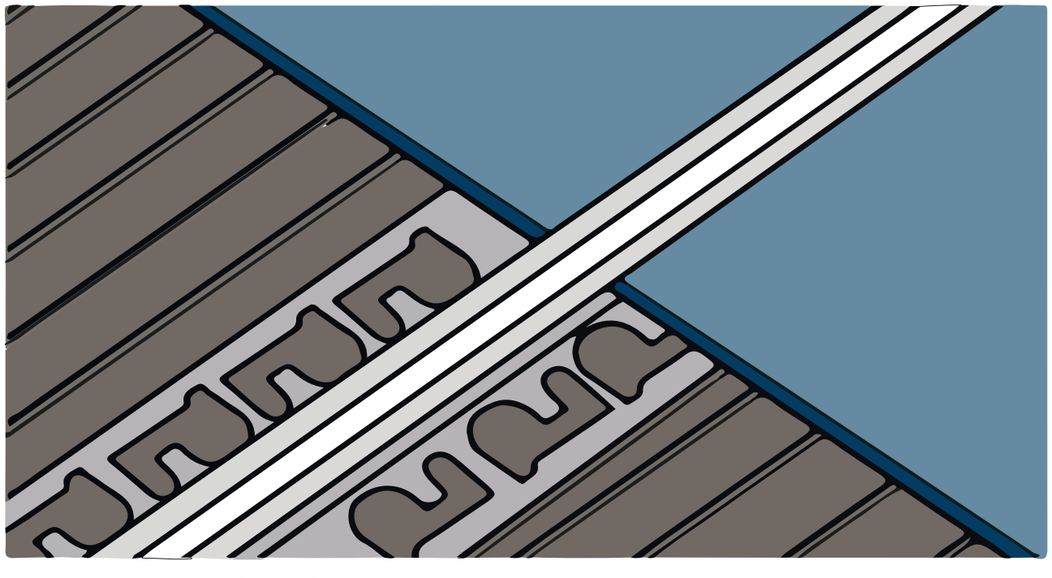
Necessary for changes in plane and in the perimeter boundaries of the areas to be tiled; they minimise the transmission of tension between different construction elements that work together.

For flooring, these joints affect the wall tiling as well as the thickness of the mortar expansionwhile they may only affect the wall tiling on walls. In any case, any perimeter joints must be at least 8 mm thick.

10.8 STRUCTURAL JOINTS

They are the ones in the building structure which not only cross through the structure but also the rest of the layers of the system (wall tiling, adhesives, insulation layers and decoupling layers, etc.) meaning they must also be respected with Vicostone slabs. They must normally be finished off with a metal profile or elastic sealant.





10.9 LEVELING SYSTEMS

They are of special importance for large-format tiling to get completely flat and even finishes. There are several advantages to these systems:

- They help achieve leveled floor tiling
- They ensure the Vicostone slabs are firm against the support
- They reduce the slab installation time

Leveling process:

1. Install the leveling supports: once the adhesive is spread, place the plastic supports under the piece all along the sides of the piece. For large-size pieces, more than one support per side is recommended.

2. Position the floor tile and insert the wedges in the support groove, being careful not to break them. Now, you can check the exact levelness of the floor tile with a level. If not correct, adjust by putting pressure on it with the corresponding wedges.

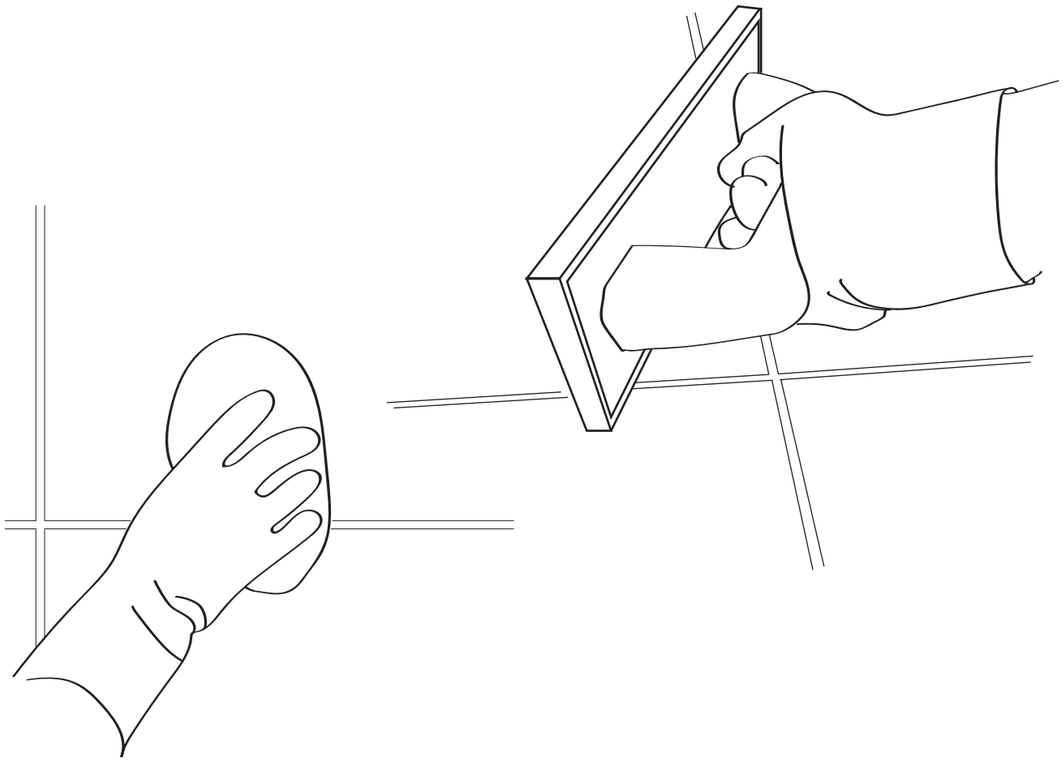
3. Let the adhesive completely set and remove the supports, separating the part that sticks out of the base with a slight crosswise blow.

11 GROUTING

Grouting material is no less important when installing floor tiling which may end up ruining a good installation otherwise both aesthetically or functionally.

The choice of grout depends on the conditions to which it will be exposed:

- Mechanical characteristics: adherence, deformability, resistance to traction, compression and bending
- Material behaviour: water absorption, steam diffusion capacity, resistance to abrasion, fire, frost/defrosting cycles
- Surface characteristics: uniform colour and texture, chemical resistance, stain resistance, mould resistance



11.1 CEMENT-BASED GROUTING PRODUCTS

Recommended for most applications. Grouting that is high-performance, anti-mould, antifluorescence, quick fix and dry, water-repellant, class CG2 as per EN 13888 is recommended.

Application

Before applying the grouting, dampen the surface around the joint with a wet cloth or a sponge using a minimal quantity of water so the joints remain dry. Then, completely fill the joints without leaving any gaps using a 45º trowel. Remove any excess grout from the tile surface.

Cleaning

Begin cleaning as soon as the grout begins hardening (generally 10-30 minutes). Do not let any grout remain on the tile surface for much time before completing the initial cleaning.

Use the lowest quantity of water possible to clean the grout from the surface. Any excess water will discolour the joints.

After cleaning each time , rinse and squeeze the sponge so no excess water remains on the slab surface or in the grouted joint.

Change the rinse water frequently. Make sure all slabs are well-cleaned before the grout dries. Clean the surface again around an hour later with a clean rag to remove any remains. If there is still some grout on the slabs because it wasn't cleaned correctly, you can use a cement remover but no earlier than 24 hours after grouting.

11.2 REACTIVE RESIN GROUTING PRODUCTS

Application

Apply to dry joints with a rubber trowel, making sure the joints are completely filled.

Remove any excess material with the same trowel diagonally, leaving only a fine film of excess on the piece.

Cleaning

Epoxy grout or reactive resins must be cleaned when wet. Dampen the grouting surface and rub with a sponge rather hard in circular movements to soften the grout film and remove it.

Replace the sponge when very impregnated with resin. This is important because hardened grout remains are difficult to remove.

You can do a final cleaning with special cleaners for epoxy grout even several hours after application.

12 BONDING PRIMER

These are products that enhance the adherence between the adhesive and the support or piece for better adherence results than theoretical results simply with adhesive.

Apply the bonding bridge directly on the back of the Vicostone piece in a fine film, preferably using a sponge roller in one direction and repeating the operation by crossing back over.

Wait for the product to dry completely before continuing to install the piece

For ordinary cleaning, a cloth dampened with water and neutral soap is perfectly adequate.

For more persistent or burned-on stains, we recommend moistening the dirt with hot water (to soften any residues) and then rinsing or removing with a clean cloth. It is also recommended to use a sponge with soft fibres designed for cleaning glass ceramic and glassware in general.

Particularly abrasive sponges or steel wool must be avoided at all costs.

We also recommend not leaving acid and alkaline products for extended periods of time on the stone; especially if not diluted.

If bleach is used, it must not be left applied to the stone for more than 10-15 minutes. Afterwards, rinse with plenty of water and never leave bleach remaining on the product more than the recommended time.

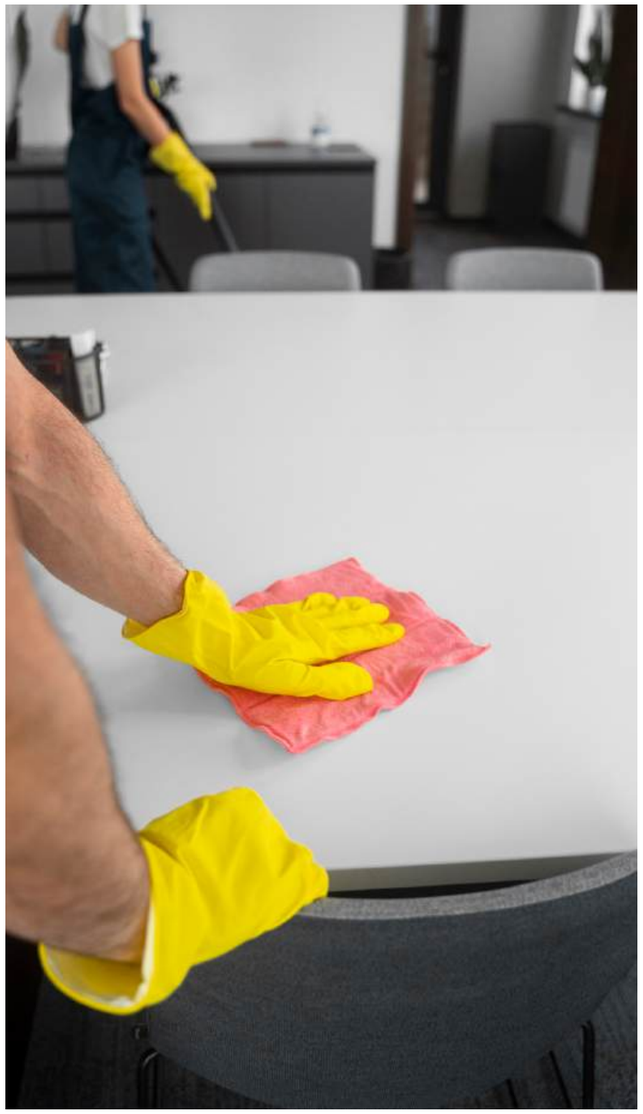
For the correct maintenance of the slabs, Vicostone recommends that you abide by the following precautions:

- Always use pan stands, coasters and napkins
- It is wise not to cut foods directly on the countertop but to use chopping boards for this purpose;
- Never drag household appliances, knives and utensils in general across the countertop, as this may leave steel stains that are difficult to remove;
- Never use ceramic knives directly on the countertop.

HEAT RESISTANCE

Vicostone surface complies to the performances required by the EN ISO 10545-1 standard in terms of resistance to thermal shocks.

Although Vicostone Sintered Surfaces can withstand high temperatures (300ºC), it is recommended to use a trivet for hot objects, especially for polished finishes.



PERSISTENT STAINS

Whenever routine cleaning is insufficient, certain specific procedures need to be followed based on the stain to be removed. The length of time that a stain is left on the surface is important, so we recommend cleaning them as soon as possible.

Tip:

Start cleaning a small part of the area in question to verify effectiveness before proceeding to the entire surface. When using more aggressive products, we recommend rinsing with plenty of water once clean. Below is a list of some of the best substances for removing certain stains.

Type of stain	Product (over a Matte - Matte VeinTouch finish)	Product (over a Polished finish)
Grease	Neutral / Alkaline	Neutral / Alkaline
Oil	Neutral	Neutral
Citric	Neutral	Neutral
Fruit juice	Neutral	Neutral / Alkaline
Soft drinks	Neutral	Neutral
Coffee / tea	Neutral	Neutral / Alkaline
Wine	Neutral	Neutral / Alkaline
Vinegar	Neutral	Neutral / Alkaline
Sauces / Ketchup	Neutral / Cream or powder	Neutral
Ice cream	Neutral	Neutral / Alkaline
Wax candle	Solvent	Solvent
Calcareous residue	Acid	Neutral / Acid
Oxides / rust	Neutral / Acid	Neutral / Acid
Metal scratching	Neutral / Acid	Neutral / Acid
Permanent marker	Cream or powder	Neutral / Alkaline
Resins	Solvent	Solvent

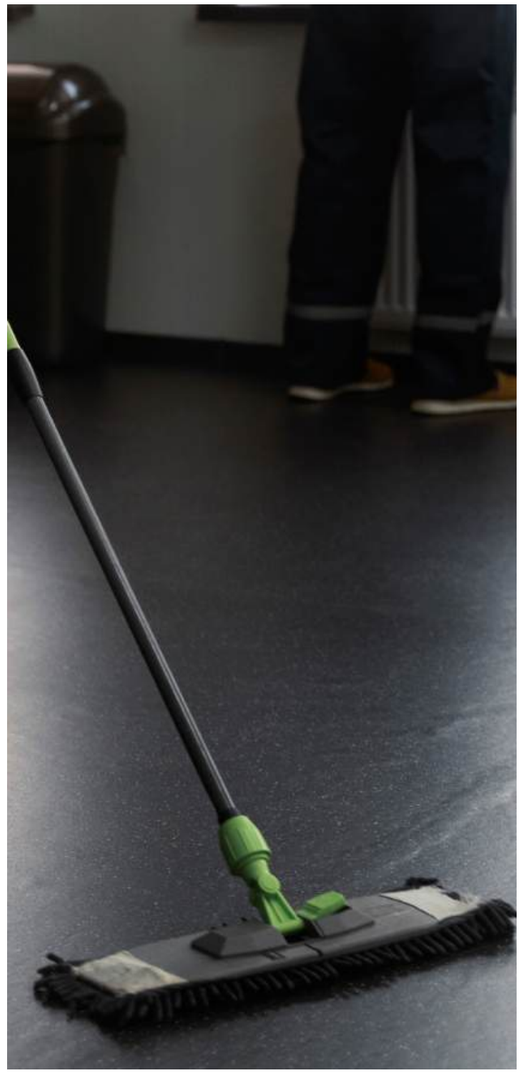
Precautions

- Avoid products that contain hydrofluoric acid and its derivatives. (Oven cleaners, for example).
- Do not use concentrated hydrochloric acid or caustic soda.
- Avoid extreme heat through contact or radiation from electric grills, cooking surfaces, ovens, fireplaces, barbecues, etc.
- Ceramic knives may scratch Vicostone surfaces with all finishes, in the same way that they scratch other brands in the same product category and other categories.
- Avoid strong impacts around the edge of a countertop to prevent chipping.

Special consideration for Polished finishes:

1. To clean surfaces with a Polished finish, it should be remembered that this surface resistance is inferior to other finishes, such as Velvet, so some substances may affect its initial appearance. When cleaning, we recommend avoiding using items that may be rough or abrasive on the surface, such as scouring pads, knives, or cleaners with granules.

2. We also recommend avoiding basic products with a pH above 11. When using bleach, we recommend rinsing with plenty of water and never leaving it in permanent contact. We recommend using flannel or microfibre cloths.



After laying the material it is essential to clean them thoroughly. If residues of grouting are not removed properly or quickly, this may result in stains that are difficult to remove and may create a film of concrete on the floor that traps all kinds of dirt.

To efficiently remove any residues of cement-based grout, it is essential to wash the floor with a solution of water and buffered acid, following the percentages of water/acid indicated on the packaging of the product used.

Allow the detergent to work for a few minutes without letting it dry out, then wipe over the floor with colourless cloths (remove any residues with a stiff brush).

Finally rinse with plenty of water and repeat the operation as necessary.

ORDINARY FLOOR CLEANING

Vicostone does not recommend the use of oily soaps and waxes. In place of these products, we recommend using neutral detergents, such as diluted ammonia or bleach, that have been suitably diluted in water.

After washing, the floor should only be dried if it has a polished finish (to avoid any visible stains from appearing).

We always recommend testing any detergent before use, always following the instructions and the precautions indicated by the manufacturer to avoid voiding of warranty.

EXTRAORDINARY FLOOR CLEANING

In the case of residues and stains that are particularly stubborn and difficult to remove, Vicostone suggests cleaning the surface first with warm water and neutral detergents.

For persistent stains, follow these specific guidelines for more intense cleaning methods (depending on the type of stain needing to be treated):

- Non-abrasive detergents with a neutral pH
- Slightly abrasive detergents
- Acid or alkaline detergents
- Solvent-based detergents

We recommend always following the instructions and precautions indicated by the manufacturer.

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