



PRODUCT MANUAL FOR VICOSTONE® UTRATHIN PRODUCTS

ultrathin.vicostone.com

PURPOSE

The purpose of this manual is to define the basic technical requirements, suggestions and guidelines related to the introduction of the product, its design, usage, installation and maintenance.

TERMINOLOGY

“VICOSTONE® Ultrathin” refers to any engineered stone slab, tile or cut-to-size product that is 5 millimeters thick and is manufactured, marketed and sold by VICOSTONE JSC (VICOSTONE), its approved distributors or agents.

“Customer” refers to any person, firm or company placing an order with VICOSTONE or its approved distributors (“Company”) for the purchase of VICOSTONE® Ultrathin.

“Product Manual” refers to the technical information, specification, design, fabrication, maintenance and other data relating to the use and application of VICOSTONE® Ultrathin.



LIMITATIONS AND RESPONSIBILITIES OF VICOSTONE AND THE CONSUMER/S.

Information in this Product Manual is provided only as a guide in the design, installation and care of VICOSTONE® Ultrathin.

VICOSTONE assumes that the designers, fabricators and installers using VICOSTONE® Ultrathin are familiar with all aspects outlined in this Product Manual and will strictly adhere to the recommendations and specifications described in the Product Manual for use with VICOSTONE® Ultrathin only.

Although the preparation of this document was done with every precaution and measure to the best of its ability, the Company assumes no responsibility for errors, omissions, or damages resulting from the use of information contained in this Product Manual. Under no circumstances shall the Company be liable for any loss of profit, any other loss, damage caused or alleged to be caused either directly or indirectly as a result of any person solely relying upon any information contained in this Product Manual.

The Company reserves the right to change or modify this Product Manual or its electronic version at any time without notice. It is the responsibility of the Customer to consult or contact their local VICOSTONE® Ultrathin distributor for accessing the latest version or updates.



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I. INTRODUCTION

VICOSTONE® Ultrathin is a composite of natural minerals and rocks - mainly quartz minerals bound with resin, pigments and other fillers. VICOSTONE® Ultrathin is manufactured using the most advanced machinery and technology from Breton S.p.A. of Italy combined with VICOSTONE's exceptional innovation and expertise.

VICOSTONE® Ultrathin is a super thin, high quality, extremely low porosity product that is highly resistant to stains, scratches and heat. VICOSTONE® Ultrathin requires minimum maintenance to remain in excellent condition for many years.

1. COLORS

VICOSTONE® Ultrathin offers the design advantages of traditional quartz products with a wide color palette that includes marble, granite, concrete, sparkling, terrazzo and monovein looks. The graceful colors of VICOSTONE® Ultrathin bring elegance to all surfaces. The collection reflects the modern style and trends that leading architects and designers prefer and expect.

Please visit <https://ultrathin.vicostone.com> for the latest list of VICOSTONE® Ultrathin colors.

2. FINISHES

All VICOSTONE® Ultrathin products are available in a honed finish. According to VICOSTONE's warranty policy, VICOSTONE does not warrant products in special finishes (including honed, leather, eggshell or brushed finishes). Therefore, VICOSTONE® Ultrathin products are not covered by warranty.

Please read VICOSTONE's Care and Maintenance guidelines carefully for the best maintenance methods.

3. DIMENSION

Slab Size: 144 x 305 cm (56 x 119 inches)
Thickness: 5 ± 0.5mm (13/64 in)

4. WEIGHT

- Weight of each slab:
- Weight per square meter: 11 ± 1.1kg
 - Total weight of a full slab: 45 ± 4.5kg

5. TECHNICAL SPECIFICATIONS

The following tests show the superior performance benefits of VICOSTONE for interior design applications. WALLS, cabinets cladding and WALL PANELING to some special applications such as ROUND cocktail tables in the hospitality industry or cruise ships vanities in the boating industry...

NO.	SPECIFICATIONS	TEST STANDARD	RESULT
1	Water Absorption (% by weight)	EN 14617-1:2013	≤ 0.03%
2	Apparent Density	EN 14617-1:2013	2.2-2.4 gr/cm³
3	Flexural Strength	EN 14617-2:2008	> 55 MPa
4	Dimension Stability	EN 14617-12:2012	Class A
5	Impact Resistance	EN 14617-9:2005	≥ 1.5 J
6	Surface Hardness	EN101	6.0 - 7.0 Mohs
7	Resistance to Deep Abrasion	EN 14617-4:2012	Volume of chord: V≤ 195 mm³
8	Freeze-Thaw Resistance	EN 14617-5:2012	No defects after 25 freeze-thaw cycles
9	Slip Resistance at Honed 400	DIN 51130:2004	R9 - R10
10	Microbial Resistance	ASTM D 6329:2015	Ranking 3: Resistant to Mold Growth
11	Chemical Resistance to Acids	EN 14617-10:2012	Class C4
12	Thermal shock resistance	EN 14617-6:2012	No visual defects after 20 cycles



6. APPLICATIONS

Interior applications: The 5-millimeter thickness of VICOSTONE® Ultrathin quartz makes it ideal for a variety of interior design applications, including: kitchen countertops, backsplashes, cabinet cladding, wall coverings, bathroom vanities, shower walls and tub surrounds. It also creates opportunities for special applications like round cocktail tables for the hospitality industry or lightweight vanities for the cruise ship and boat industries. The RV industry is also an excellent place for lightweight Ultrathin products to be used.

VICOSTONE® Ultrathin makes furniture renovations more possible and sparks creative design ideas by being able to attach onto different substrates like wood or metal. The fusion increases durability for the materials in addition to its decorative purpose. VICOSTONE® Ultrathin may result in color change

and warping when exposed to direct sunlight. It is advisable to avoid direct sunlight over a prolonged period on the surfaces used in the above applications.

Fireplace Mantel Applications: VICOSTONE® Ultrathin can be used for fireplace mantels but is not recommended for fireplace surrounds because excessive heat, prolonged heat or sudden temperature changes can damage any stone material. VICOSTONE® Ultrathin should not make direct or indirect contact with the firebox or surfaces over 150 C (300 F).

Exterior Applications: The Company does not recommend VICOSTONE® Ultrathin for use in exterior applications because color change and warping may result when it is exposed to direct sunlight.

II. MATERIAL INSPECTION

1. MATERIAL INSPECTION CHECKLIST

All fabricators working with VICOSTONE® Ultrathin are recommended to perform a visual inspection before cutting.

Prior to making the first cut, inspect slab(s) for the following.

<input type="checkbox"/> Hair-crack	<input type="checkbox"/> Slab-to-slab color match	<input type="checkbox"/> Color consistency within the sheet
<input type="checkbox"/> Length and width	<input type="checkbox"/> Thickness	<input type="checkbox"/> Inconsistent gloss level
<input type="checkbox"/> Irregular spots	<input type="checkbox"/> Flatness	<input type="checkbox"/> Any other defects

If you detect any defect after taking delivery of the slabs, please contact your local VICOSTONE distributor for advisement before cutting into the material.

2. COLOR MATCH

When more than one slab is required for a project, checking that the slabs color-match is one of the most important elements of a visual inspection.

Take all the slabs for the project from the same batch and shade numbers which are shown clearly on the barcode labels affixed to all slabs. If the label is removed, batch and shade numbers can be found printed on the back of the slabs.

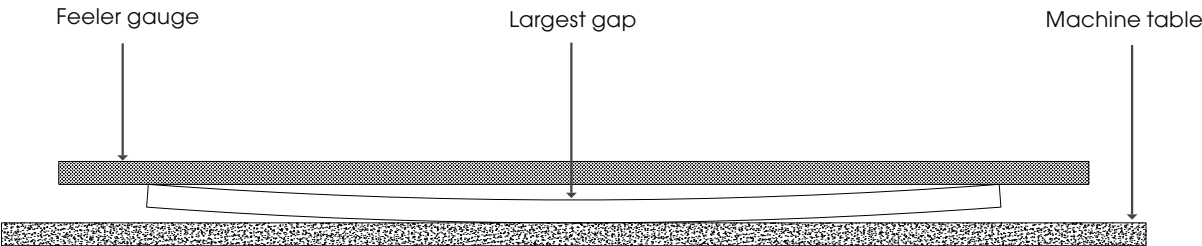
Always do a visual color-match under similar light conditions as found at the job site. Before cutting, visually inspect the slabs to ensure that an acceptable color-match is achieved.



3. FLATNESS

Follow the steps below to check the flatness of each slab:

- Place the slab horizontally on an absolutely flat surface
- Use a completely straight aluminum rod or a similar object which can cover the entire width and length of the slab.
- Use a feeler gauge to measure the width between the slab and the rod.



Flatness inspection

4. THICKNESS

4.1. THICKNESS

Use a digital Vernier caliper or a mechanical Vernier caliper to measure the thickness of the slab.



Feeler gauge

Follow the instruction of ruler provider to achieve the best result.



Measurement tool - Digital Vernier caliper to inspect the thickness

Tolerance: ± 0.5 mm

4.2. LENGTH AND WIDTH

Standard size of a 5mm slab is:

- Length: 3050 mm ± 5 mm
- Width: 1440 mm ± 5 mm

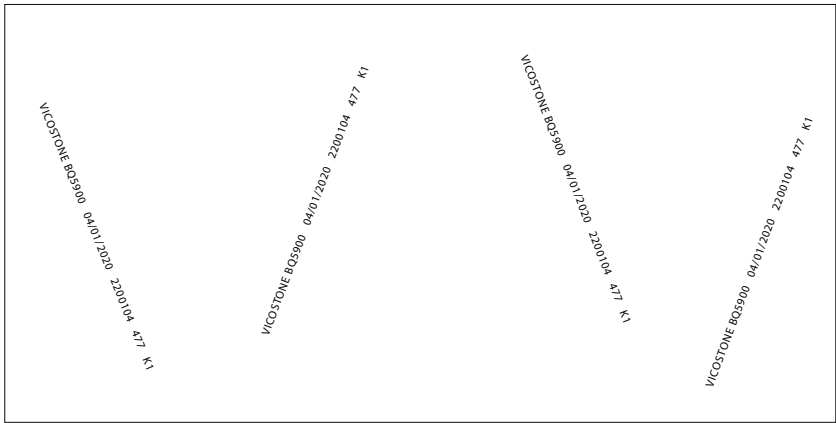
5. SLAB IDENTIFICATION

Important information of VICOSTONE® Ultrathin slabs relating to factory production is not only shown clearly on the barcode sticker but is also printed on the back of slabs.

VICOSTONE Barcode stickers



Printing on the back side



It is extremely important to keep these slab reference numbers to be able to trace its production timeline, or to submit a claim in the event of receiving faulty material.

III. MATERIALS HANDLING & STORAGE

VICOSTONE® Ultrathin slabs must be loaded, unloaded and transported by means of a forklift, bridge crane or other lifting equipment with special tools due to its unique thickness.

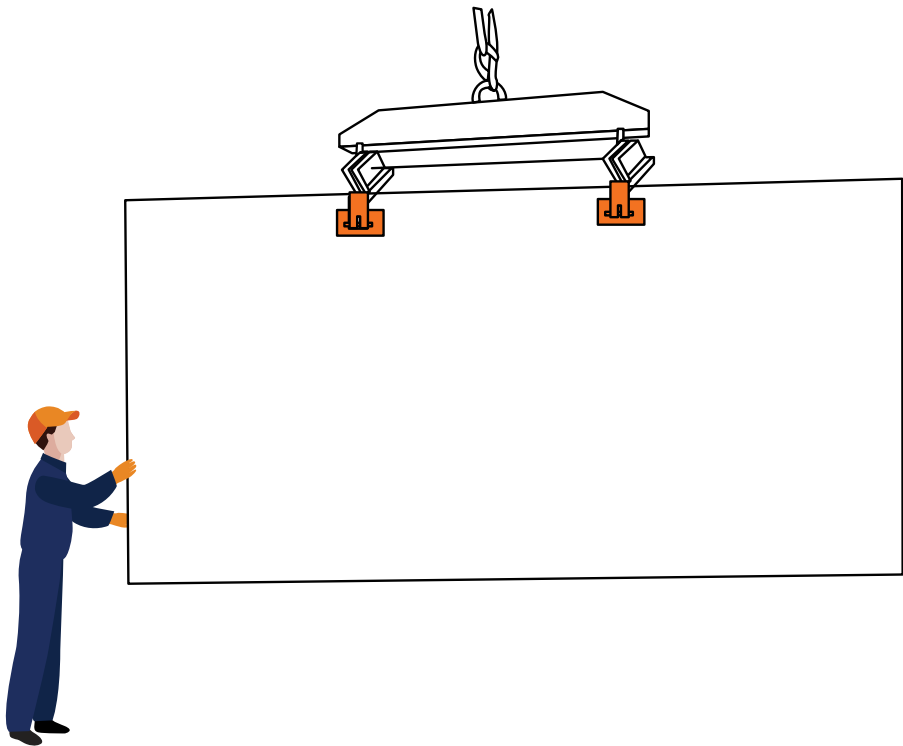
While handling and transporting, the slabs must be kept in balance according to their center of gravity.

1. METHOD OF LOADING AND TRANSPORTING SLABS

1.1. USING A CLAMP

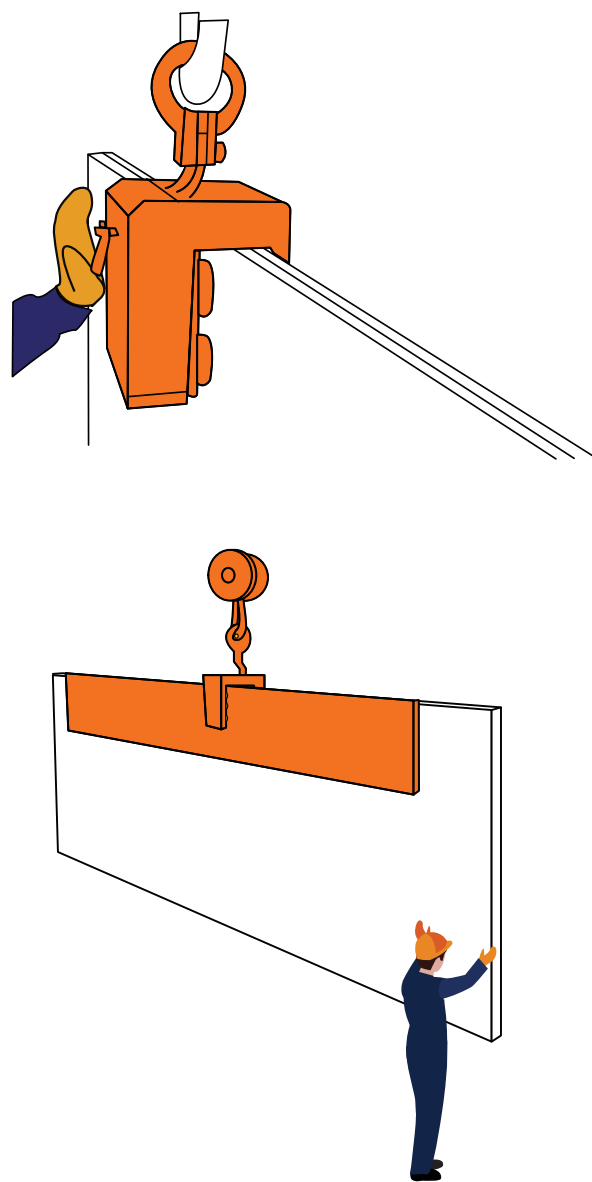
Use a proper clamp to load and move each slab.

A double scissor clamp (as illustrated below) is recommended:



A single clamp can be used. To keep the operator and slab safe, it is recommended to use a 300 x 2 cm (120 x 0.75 in) plank to clamp the slab.

Recommendation: Do not clamp more than two slabs at the same time.



1.2. USING A SLING

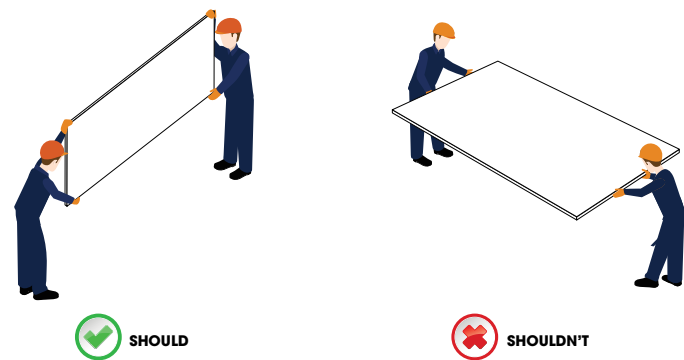
It is recommended to use canvas slings to move many slabs with maximum at 40 slabs each time.

Recommendations: Use appropriate protective covers (recommended by canvas sling suppliers) to avoid damage and extend the lifespan of the canvas.



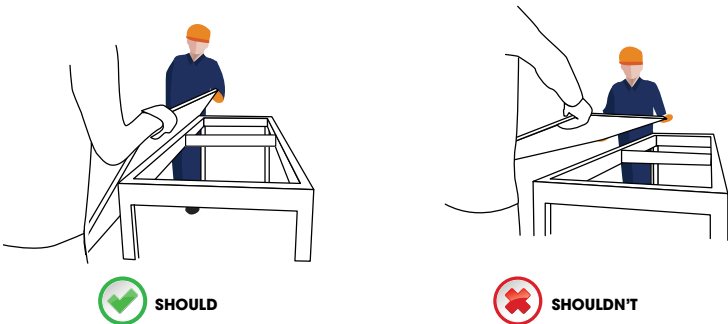
1.3. MANUAL HANDLING

Two people should firmly hold the slab at the corners, turn it upright, and then move at a consistent pace.



Recommendations:

- Only handle one slab at a time.
- Always use appropriate personal protection equipment (gloves and shoes). to avoid accidents.
- Lift up and move each slab while it is vertical to avoid breaking the slab.



Moving a slab onto a bench

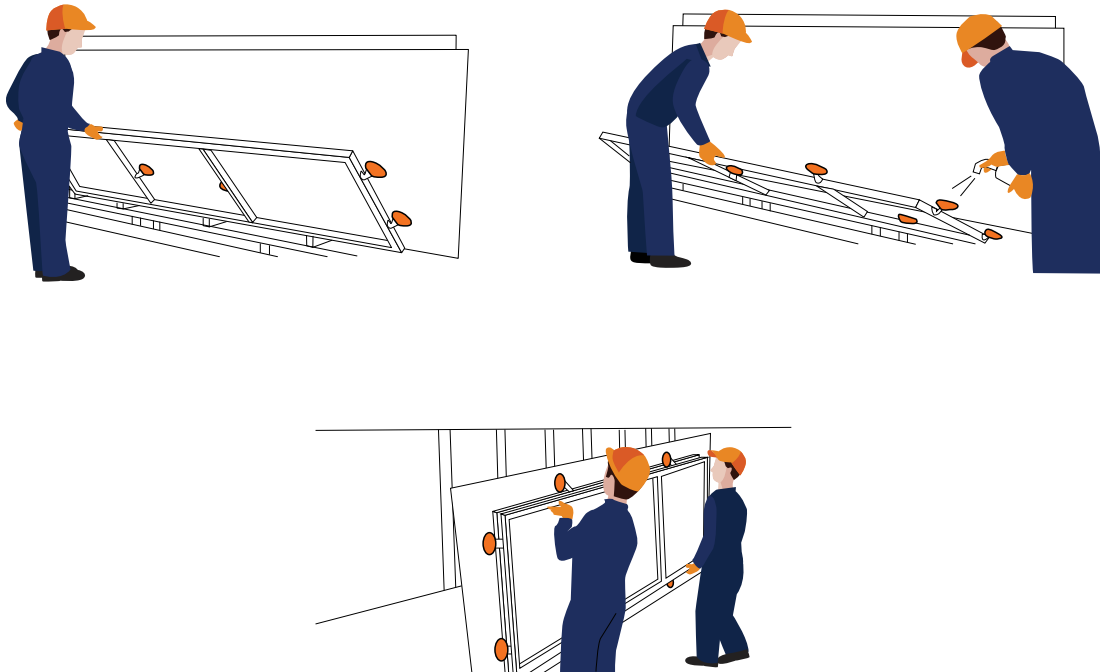
- Two people should hold the corners of the slab and move it while it is vertical.
- Place the slab on the edge of the bench.
- Slowly tilt the slab in unison onto the bench.

1.4. USING SUCTION CUP FRAME LIFTER

Use a suction cup frame lifter to move each slab. A suction cup lifting frame consists of a metal frame and multiple suction cups that move along the frame. The frame can be adjusted according to the slab size. A suction cup frame lifter is typically used for handling tiles or glass.

Recommendations:

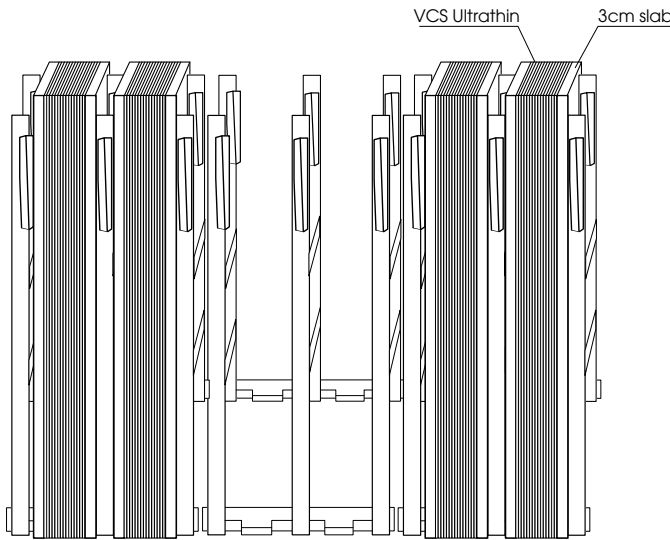
- Clean the surface of suction cups and slabs before using.
- Distribute pressure and support points as much as possible. At least 6 suction cups should be used.
- Secure all suction cups firmly on the slab before moving.



2. STORAGE AND MAINTENANCE

Materials should be stored in a warehouse using E-shaped frames.

When using E-shaped frames, place a rigid material such as 3 cm slabs of quartz or granite on both sides as a support structure.



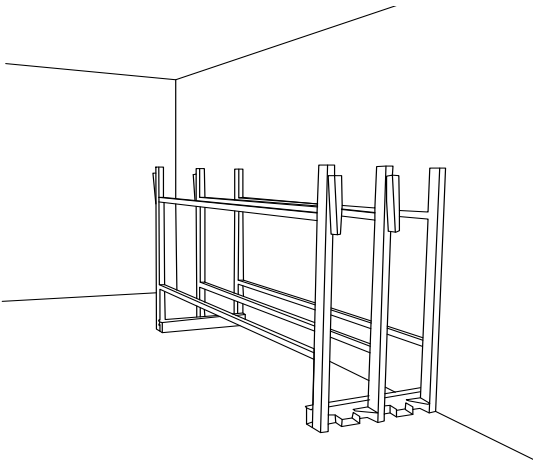
Recommendations:

- E-shaped frames must be soldered firmly. Using E-shaped frames with at least 3 vertical bars to avoid bending the slabs.
- Use rubber or polyethylene covers with anti-slip grooves to prevent the materials from contacting directly with metal frames.

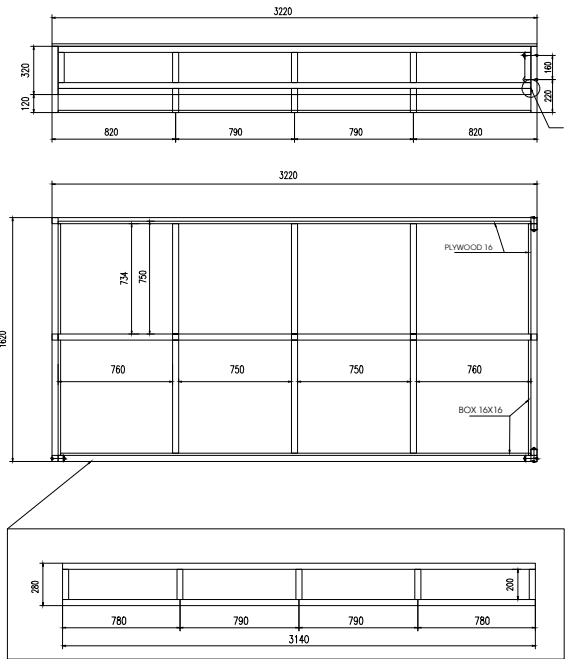
3. PACK AND TRANSPORT

3.1. LOADING INTO CONTAINERS

- VICOSTONE® Ultrathin slabs can be loaded onto a container using E-shaped frames or VICOSTONE® Ultrathin boxes.



E-shaped Frame



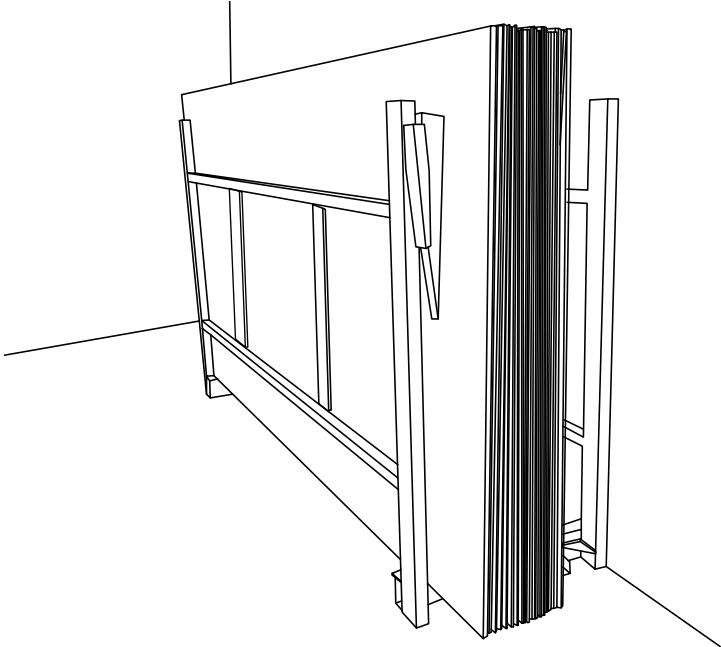
VICOSTONE® Ultrathin boxes



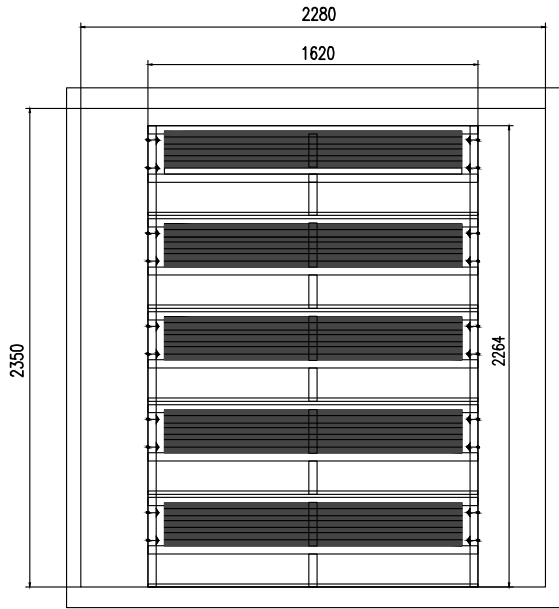
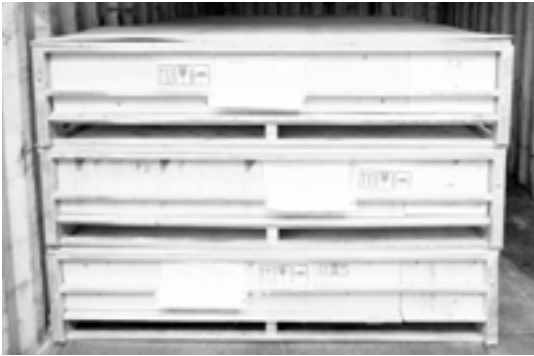
For one 20-foot container:
With E-shaped frames, one container can load a maximum of 280 slabs.

With boxes, one container can load a maximum of four boxes (200 slabs total).

- For safety reasons, always comply with standard safety measures and use personal protective equipment.



E-shaped Frame



VICOSTONE® Ultrathin boxes

Recommendations:

For E-shaped frame:

- Use forklift truck with double scissor clamp to move slabs.
- Do not handle more than 2 slabs at a time.
- Use wooden boards on both sides of each frame
- Secure the frames to the container with straps.

For VICOSTONE® Ultrathin box:

- Lift one box at a time.
- Do not put more than four boxes into one 20-foot container
- Use a 5-ton forklift with forks at least 2 meters long to move the boxes.
- Secure the boxes to the container with metal brackets and straps.



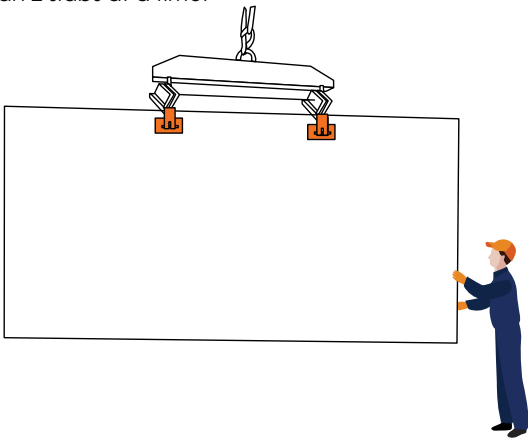
5T Forklift wih 2m length forks

3.2. UNLOADING SLABS FROM CONTAINER

a. For E-shaped frame

- Step 1:** Remove straps and wooden boards.
- Step 2:** Use a forklift truck with double scissor clamp to unload slabs from each frame.

Recommendation:
Do not handle more than 2 slabs at a time.



b. For VICOSTONE® Ultrathin box

- Step 1:** Remove straps and metal brackets.
- Step 2:** Use forklift to unload boxes from container.



Step 3: The boxes can be used to store slabs in a warehouse. Slabs can be taken one at a time using a manual or self-powered suction cup frame lifter which can be attached to a forklift or overhead crane.



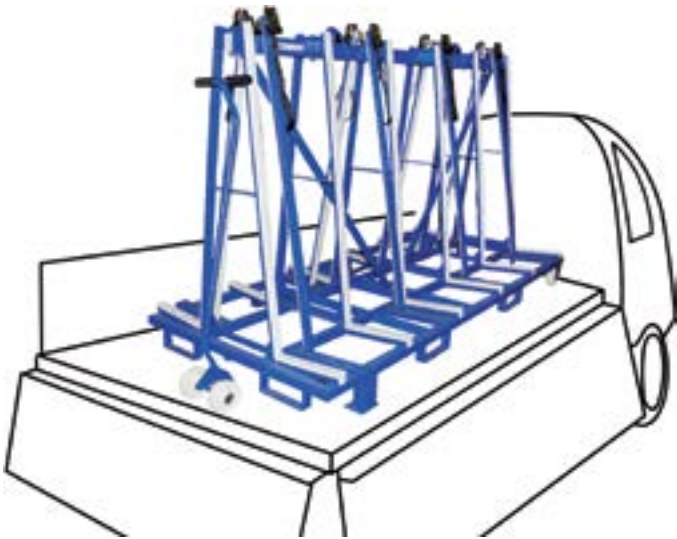
- Recommendations:**
- Lift one box at a time during unloading.
 - Use a forklift truck that can lift 5 tons and is equipped with forks at least 2 meters long.

3.3. TRANSPORTING BY TRUCK (USING A-SHAPED FRAME)

A-shaped frames should be used to transport the slabs by a truck. The slabs must be fully supported and firmly secured (with jacks and straps) to the frame to avoid breaking or falling when transporting.

A-shaped frames should be firmly secured to the truck. The use of A-shaped frames with five support points is recommended.

Use rigid materials, such as 3 cm slabs of quartz or granite as a support structure.



IV. CUTTING RECOMENDATIONS

VICOSTONE® Ultrathin can be fabricated with the same methods and tools used for traditional quartz or porcelain slabs. However, due to its special 5-millimeter thickness, some changes in the fabrication procedure should be made in order to ensure optimal production and prevent slab damage.

1. FOR CUTTING

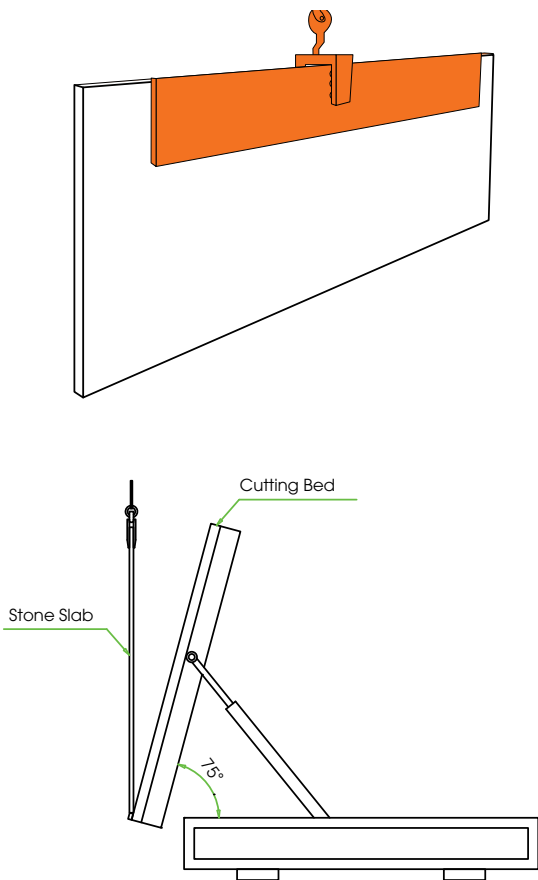
1.1. BRIDGE DISC OR SIMILAR

a. Prepare the slabs before cutting

Due to their special thickness, slabs should be handled with care and grasped with a double scissor clamp or a normal clamp with a wooden plank.

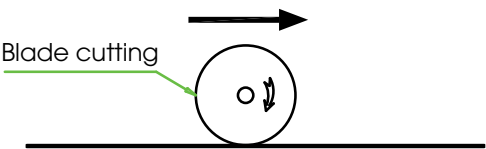
Follow the material inspection instructions in Part II of this manual and clean the slab surface before placing it onto the cutting bed.

When cutting pieces smaller than 1000 x 1000 mm, the material should be secured with a fixed clamp to prevent movement. When putting the slab on the cutting machine table, position the table at an angle of at least 75 degrees to avoid breaking the slab when lowering it onto the table.



b. Cutting process

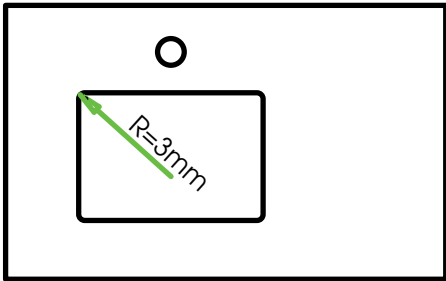
Cutting direction: Make sure the blade rotation coincides with the cutting direction.



Always supply sufficient water for the cutting area to cool the disc and minimize dust emissions.

Recommendations:

- Wet cutting and proper personal protective equipment are recommended to prevent issues related to silicosis in accordance with provisions of occupational safety and health organizations (such as OSHA and NEPSI) and VICOSTONE’s Health Guideline for Crystalline Silica.
- Make sure to use a ruler or guide from the beginning to the end of the cut to make sure the cut is straight and precise.
- When cutting at a 45-degree angle, the speed must be 30-50% slower than that of vertical cutting.
- A minimum radius of 3 mm must be applied when fabricating slabs with details, drilled holes or inside edges to avoid cracks when transporting or using the products.



Cutting parameters of bridge disc (using normal blade)

Thickness	Straight cut speed (m/min)	45° Angle Speed (m/min)	Ø Disc (mm)	RPM	Surface Speed (m/s)
5mm	1-1.5	0.6-1.1	350	(r/ min) 2000	35
			400		40
			450		45

c. Fabricating procedure for drilling holes:

Follow the steps below to drill holes:

Step 1: Mark the position of the cutout on the slab surface. Then mark the center of the circle and the center of the arc.

Recommendations: Use an actual sink or a sink template to ensure accuracy.

Step 2: Drill holes with an arc and circle: Drill tap holes and four angles with a drill bit of a suitable size.

Recommendations:

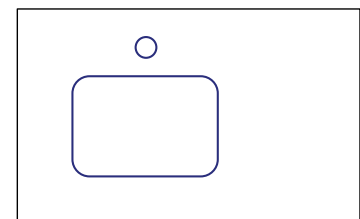
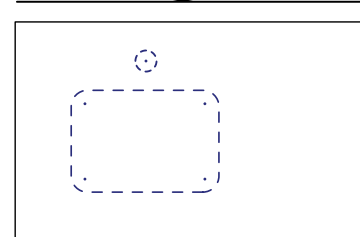
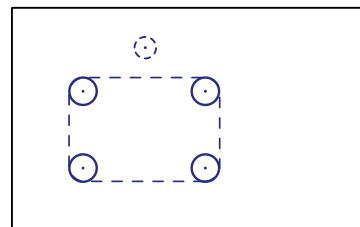
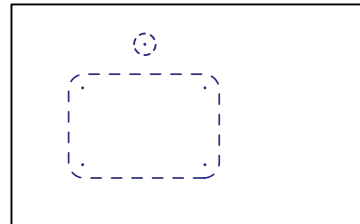
- Use a diamond drill or glass drill
- Wet drill is recommended

Step 3: Use a hand cutting machine or bridge disc to.

Recommendations: Use a diamond cutting blade

Step 4: Double check and polish the edge.

Recommendations: Use diamond polishing pads, polishing felt, and a pneumatic polisher.



1.2. WATERJET

a. Preparation before cutting

Check the machine/cutting table carefully before loading the slab on it:

- The machine/cutting table must be in the balanced position. The tolerance is +/- 1 mm for every 2 m. If the tolerance exceeds 1 mm, product uniformity can be affected. The waterjet needle can even be stuck if the distance between the disruptive point and the surface is too short.
- Clean the machine/cutting table; keep it in a firm and accurate position.

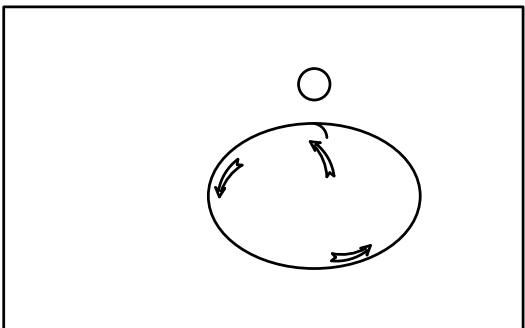
b. Cutting procedure

When cutting products on a waterjet machine, and before processing to the final gloss, an excess of 0.5-1.1 mm should be left for grinding to remove roughness from the waterjet cutting process.

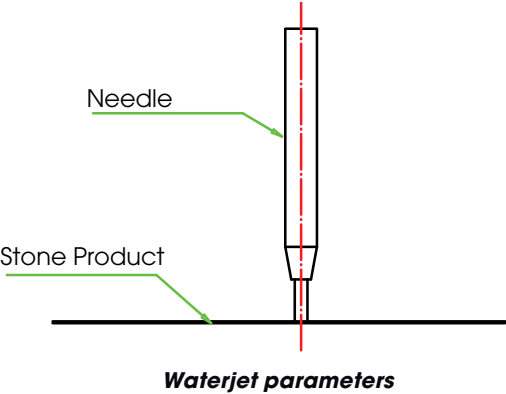
For the products that require drilling/creating a hole or making an inner edge, a minimum radius of 3 mm must be applied.

Creating inner holes should start from the drill hole in the cutout and move forward to the outside. This assures the cutting line is sharp.

For small cutting angles and drilled holes, it is recommended to cut under low pressure and at a slow speed.



A minimum radius of 3 mm must be applied when fabricating slabs with details, drilled holes or inside edges to avoid cracks when transporting or using the products.



Thickness	Speed (m/min)	Pressure (Bars)	Abbrasive flow rate (kg/min)
5mm	0.35	320	0.3

Recommendations: Cutting speed and consumption of abrasive sand are for reference only. The cutting speed and the amount of sand consumed are proportional to the surface roughness. (The faster the cutting speed, the higher the roughness of the product, and vice versa - the slower the cutting speed, the greater the sand consumption, and the smoother and more beautiful the surface will be.)

Parameters for CNC tools

RPM	Speed (mm/min)
4800	12.56

2. SUGGESTED SPECIAL CUTTING SYSTEM FOR VICOSTONE® UTRATHIN (GREENER - CLEANER)

2.1. Special cutting method for VICOSTONE® Ultrathin applied with wood plank

a. Preparation before cutting

The cutting table must be free of dust, mud, water or other contaminants. Make sure the table is straight, dry and clean.

A cutting machine requires a dust collecting function.

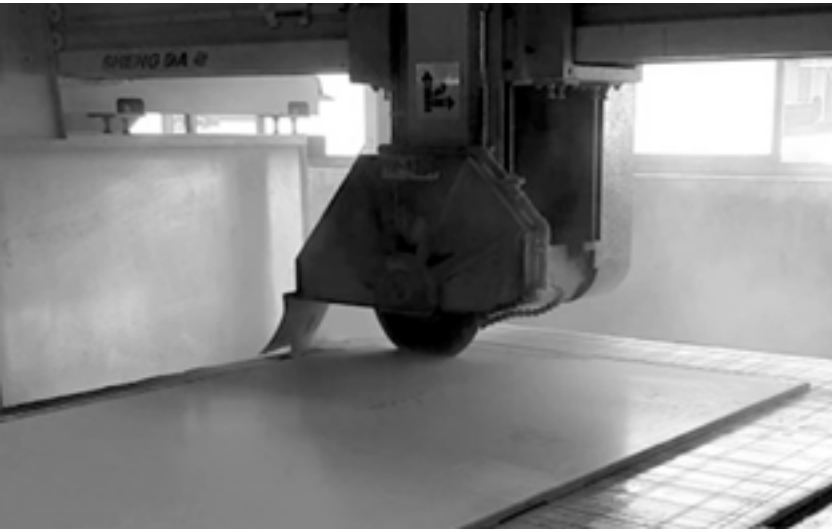
The cutting blade is superthin at 1.2 mm thickness. Because of VICOSTONE® Ultrathin’s special thickness, using a superthin cutting blade will improve the air quality as it minimizes the amount of dust released in the air and the amount of sludge generated during the cutting process.

Recommendations:

- Special superthin cutting blade with 1.2 mm thick for VICOSTONE® Ultrathin are developed and produced under Vicostone orders by leading diamond-tool manufacturers in Europe.
- For more information about this special cutting blade, please contact your nearest distributor of VICOSTONE® Ultrathin.

b. Cutting procedure

For VICOSTONE® Ultrathin slabs already attached to a wooden support base, it is recommended to use dry cutting method, and there should be a vacuum cleaner operating during the cutting process. It is recommended to use a dust blow tool at the cutting area to reduce the heat of the cutting blade and increase the efficiency of the equipment.



Cutting direction: Make sure the blade rotation coincides with the cutting direction.

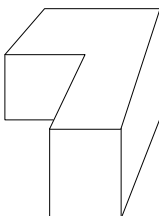
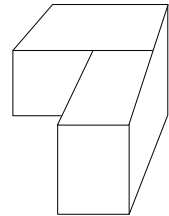
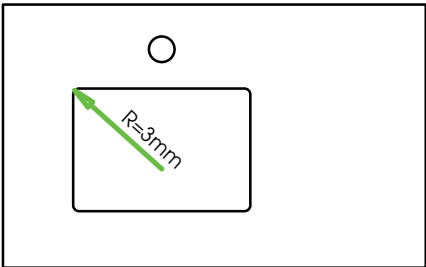
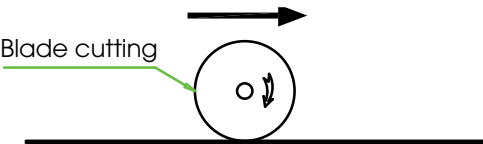
Make sure to use a ruler or guide from the beginning to the end of the cut to make sure the cut is straight and beautiful.

When cutting at a 45-degree angle, the speed must be 30-50% slower than that of vertical cutting.

Recommendations: Using solid body cutting blades is recommended. Do not use sound-proof cutting blades to cut at a 45-degree angle.

A minimum radius of 3 mm must be applied when fabricating slabs with details, drilled holes or inside edges to avoid cracks when transporting or using the products.

If there is a joint, the radius must be greater than 3 mm



Parameters for cutting using superthin blade

Thickness	Straight cut speed (m/min)	45° Angle Speed (m/min)	Ø Disc (mm)	RPM	Surface Speed (m/s)
5mm	1-1.5	0.5-1.0	300	2000	31

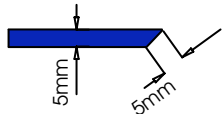
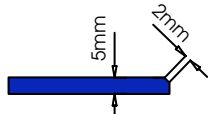
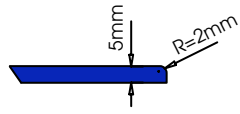
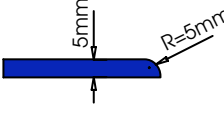
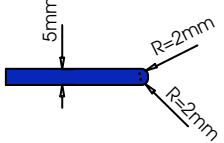
V. BASIC FABRICATION AND INSTALLATION GUIDELINES

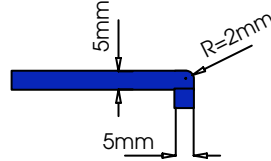
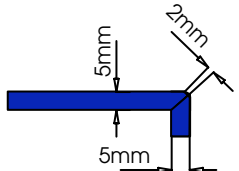
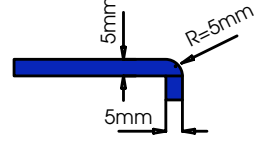
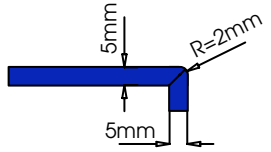
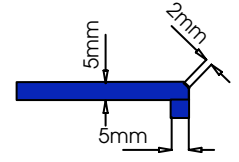
1. EDGE PROFILES

Polishing any VICOSTONE® Ultrathin edge profile should be done in a progressive manner using standard diamond polishing pads suitable for use on granite or marble products. VICOSTONE recommends the use of premium quality pads and plenty of water during processing for best polishing results. The quality of the pads being used will affect the time required to complete polishing and the quality of the finish. Polishing VICOSTONE® Ultrathin should be done by starting with a surface that is smooth, clean, and free from any residual adhesive.

VICOSTONE® Ultrathin needs to be handled with care when processing profile edges due to its 5-millimeter thickness. We recommend bevelling the outer edges of countertops to improve their resistance to impact and avoid possible cuts from sharp edges. The greater the bevel, the better it will bear any impact.



No.	Edge Profiles	Images	Polishing Sequence
1	5mm Reverse Chamfer Edge		100 - 200 - 400 - 800 - 1500 - 2000
2	2mm Bevel Edge		100 - 200 - 400 - 800 - 1500
3	2mm Half Bullnosed		100 - 200 - 400 - 800 - 1500 - 2000
4	5mm Demi Bullnosed		200 - 400 - 800 - 1500 - 2000
5	2mm Full Bullnosed		100 - 200 - 400 - 800 - 1500 - 2000

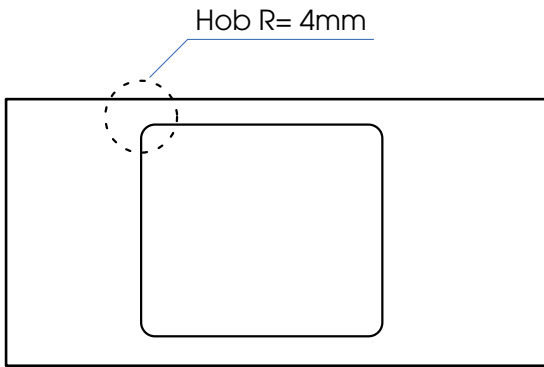
No.	Edge Profiles	Images	Polishing Sequence
6	2mm Eased Mitered Edge		100 - 200 - 400 - 800 - 1500 - 2000
7	2mm Bevel Mitered Edge		100 - 200 - 400 - 800 - 1500 - 2000
8	5mm Demi-Bullnose Laminated Edge		200 - 400 - 800 - 1500 - 2000
9	2mm Eased Laminated Edge		100 - 200 - 400 - 800 - 1500 - 2000
10	2mm Bevel Laminated Edge		100 - 200 - 400 - 800 - 1500 - 2000

2. INSIDE CORNERS & CUTOUTS

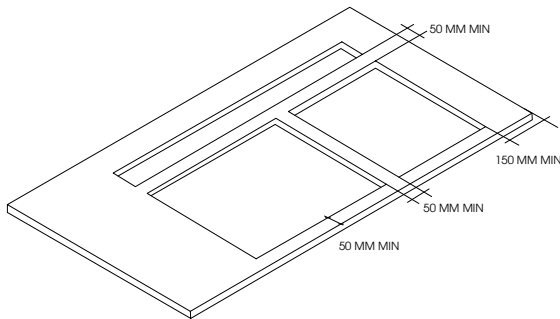
It is mandatory that any internal corner must be rounded. Always use a core bit to avoid damaging the corner area with the cutting disc when making an inside corner. Damage to the radius area can create a stress point.

Determine the location of all cutouts. Mark the center line of all cutouts on the template. Locate all cutouts on the drawing, including drop-in sinks, undermount sinks, and cooktops. All cutouts for undermount sinks should be cut and polished following the sink manufacturer’s specifications.

Radius corner of at least 3 mm is recommended on all cutouts.



The distance between the cutout and the outer edge of the countertop must be at least 5 mm. The distance between the cutout and the joint must be at least 15 mm. The greater distance is recommended when allowable to make the countertop as strong as possible.



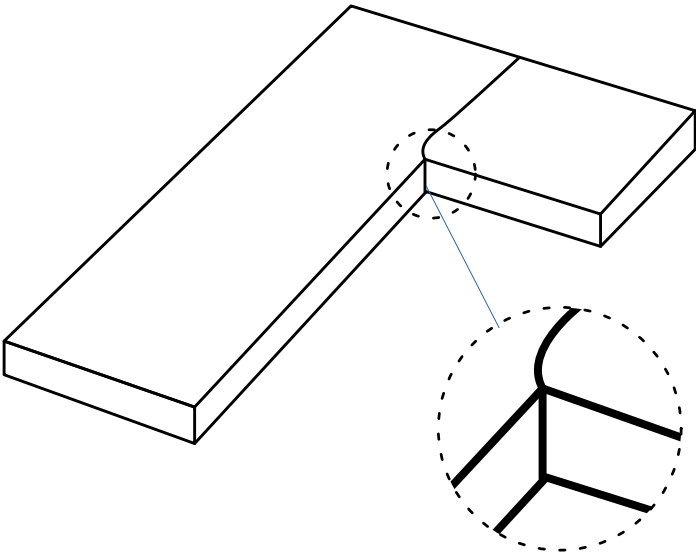
3. JOINTS

Joints are required when the countertop cannot be fabricated from a single slab. Keep in mind that VICOSTONE® Ultrathin’s slab size is 144 x 305 cm (119 x 56 in). Make sure to document customer approval on the joint locations before starting the work.

Place joints so that they are inconspicuous whenever practical. Avoid placing joints at the center of a dishwasher or undermount sink or in direct sunlight.

Make sure the cuts are straight and flat. The joining edges should be smooth and not splintered. A micro-bevel for all joints is recommended.

All joints should be made level by adjusting the material before glue sets.

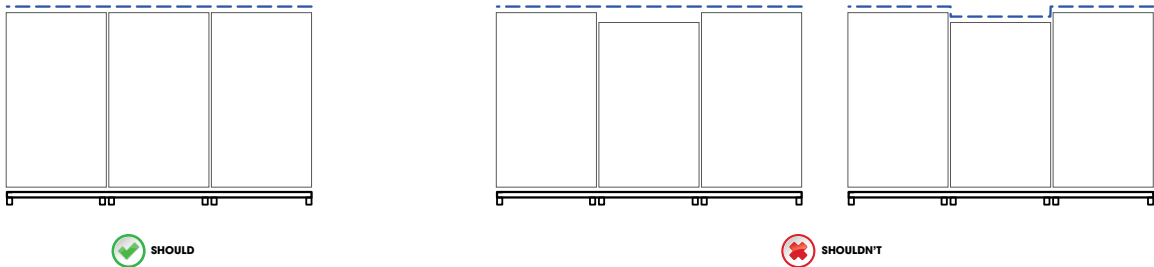


4. COUNTERTOP INSTALLATION

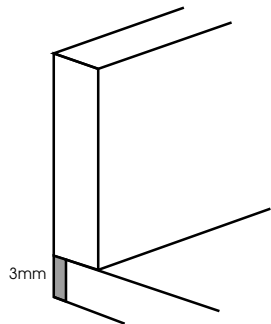
Reinforcement is required for the mounting of VICOSTONE® Ultrathin products to the surface of kitchen furniture. A wooden support base of MDF, HDF, or plywood is the best reinforcement material to use because of its high moisture resistance. That enables the base to adhere to VICOSTONE® Ultrathin products and form a homogeneous structure with improved impact resistance. The recommended thickness of reinforcement materials is 12-25 mm (0.5-1 in). Please refer to Section 1 of Part VIII of this manual for more information on how to bond VICOSTONE® Ultrathin to other materials.

Technical requirements for installing VICOSTONE® Ultrathin:

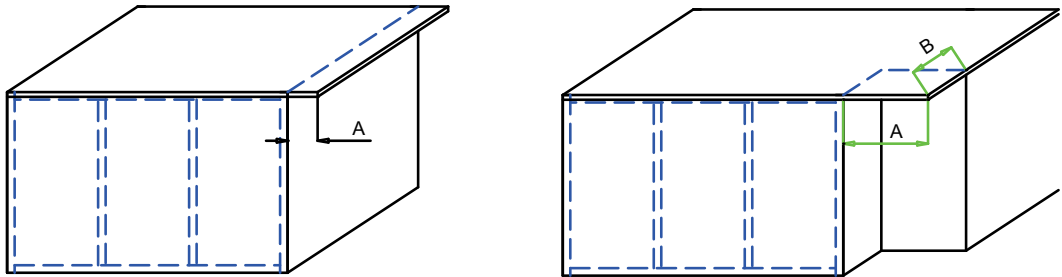
- As a wooden support base is required to reinforce the stone piece, mitered edges or laminated edges are recommended to cover the wooden material.
- Before the installation, make sure the cabinets are evenly leveled, secured to each other and then secured to the wall.



- Walls and wall corners must be designed to fit the cabinet system. Due to the irregularities in the wall and possible structural movements of the building, leaving a 3 mm perimeter expansion joint on the countertop is recommended. The visible space should be filled with silicone.



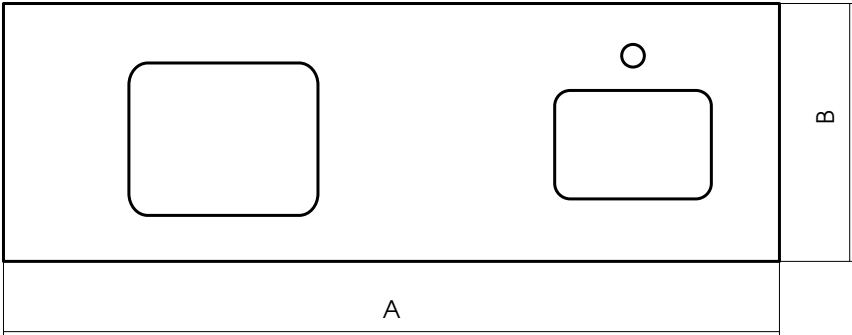
- For countertops with overhang, the recommended length of the overhang part (A, B) is 50-100 mm (2-4 in), depending on the supporting materials underneath the overhang and whether the design is a full-side overhang or partial overhang).



- For wood-based cabinets, products are required to be placed on flat panels and keep them secure during use.

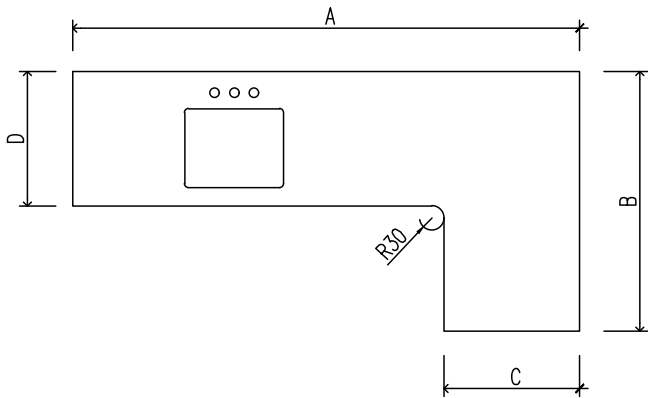
5. INSTALLATION GUIDE FOR BASIC KITCHEN COUNTERTOPS LAYOUTS:

I-Shaped Kitchen:

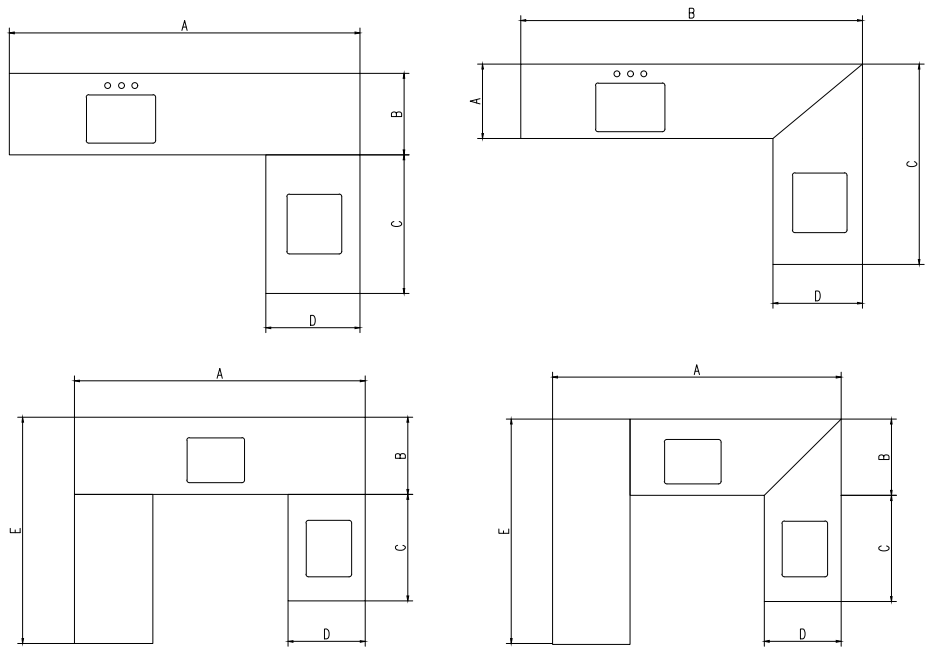


L-Shaped and U-Shaped Countertops:

In case the L-shaped countertop is made of a single piece, ensure the cutout corner has a maximum radius (at least 30 mm).



If the countertops are made from several parts, follow instructions for joints to secure proper installation.



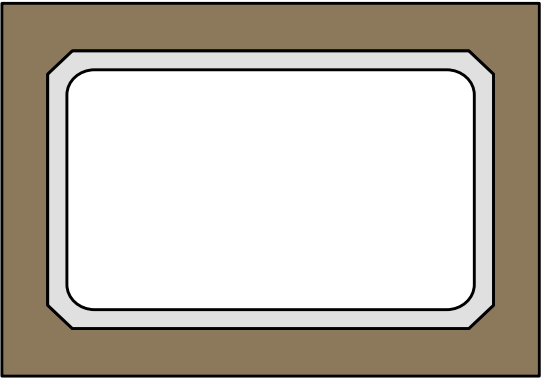
6. KITCHEN SINK INSTALLATION

6.1. PREPARATION

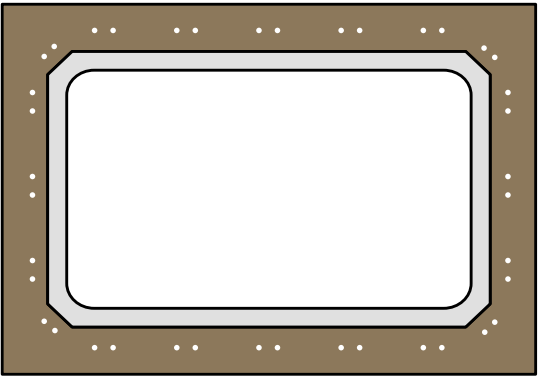
Please note that VICOSTONE® Ultrathin products are always applied with a substrate material. The following instructions should be used for 12-18 mm (0.5-1 in) thick wooden substrates.

6.2. INSTRUCTIONS ON KITCHEN SINKS

Step 1: Lathe/Cut the wooden substrate to the size of the sink rim.



Step 2: Drill holes around lathed/cut substrate to fit with metal brackets.



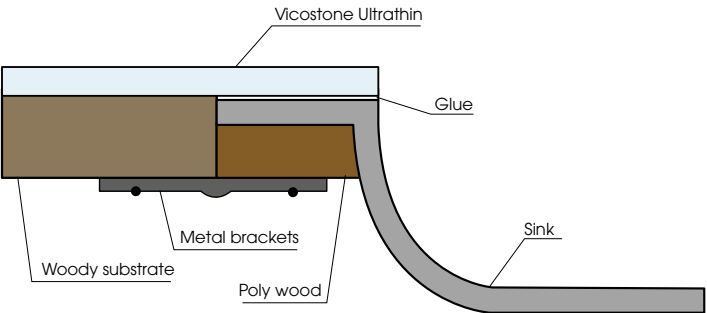
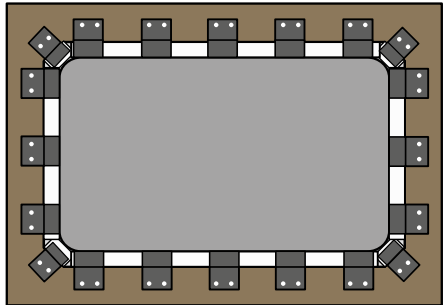
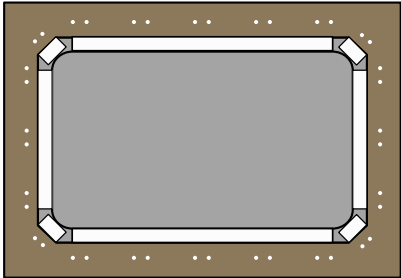
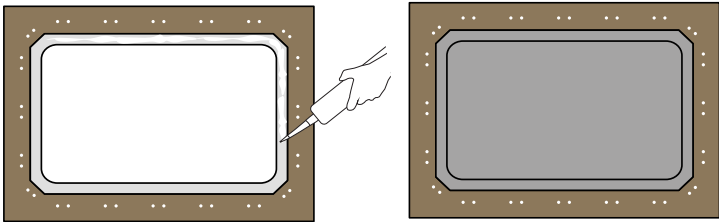
Step 3: Clean the lathed/cut substrate and put glue along the stone piece, then put the sink in and secure it in place.

Recommendations: Use a two-part epoxy glue for bonding stone and stainless steel. Please refer to Section 1 of Part VIII of this manual for more information on how to bond VICOSTONE® Ultrathin to other materials.

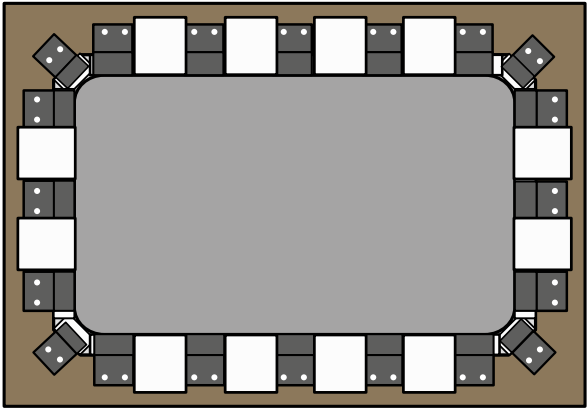
Step 4: Put glue onto the sink rim then put small pieces of Polywood around sink rim (or other types of plastic lumber).

Recommendation: Use a suitable type of glue as per the recommendation from Polywood’s manufacturer.

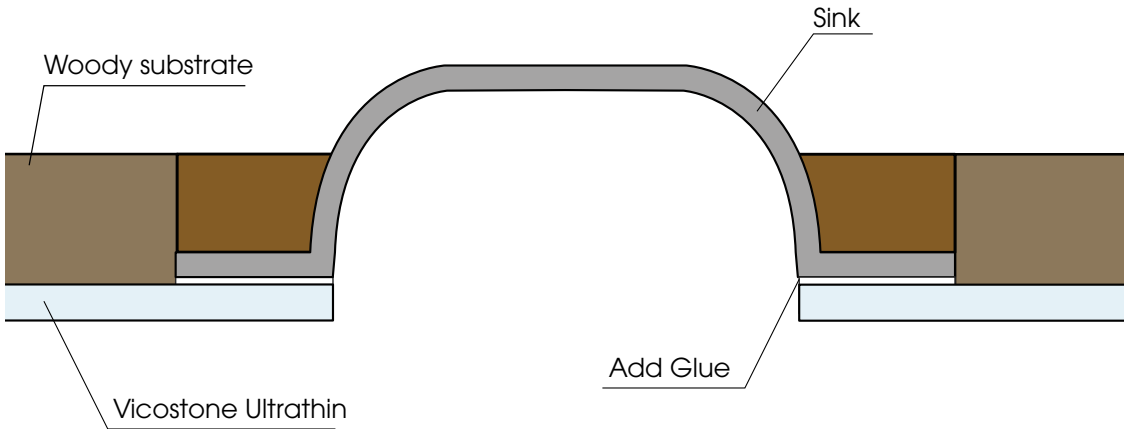
Step 5: Fasten the metal brackets with screws. The distance between the brackets should be 5-10 cm (2-4 in) depending on the sink’s size.



Step 6: Add glue between the metal brackets and put fitted Polywood pieces between brackets. The Polywood pieces should be long enough to be able to rest on the cabinet frames.



Step 7: Add glue between the sink and the stone piece to secure them together. Clean the excess glue and let it dry for a few hours before conducting the necessary tests for water leakage, durability and overall quality before use.



VI. FLOORING AND TILING

1. RECOMMENDATIONS BEFORE INSTALLATION

VICOSTONE® Ultrathin tiles are alkaline sensitive. Therefore, adhesives and grout should be tested before installation by applying a small amount of adhesive on the surface of VICOSTONE® Ultrathin tiles. After the adhesive completely dries, scrape it off of the surface and inspect the surface for chemical damage.

When cutting pieces for tiling, always start by cutting full length strips of the required pieces, then separate these strips from the rest of the slab and finish by cutting to the required format.

Choose suitable adhesives following the European Standards on Adhesives (EN 12004) or other equivalent standards. Installers should consult adhesive manufacturers for advice on how to choose the appropriate adhesive prior to installation. Adhesive manufacturers have vast experience in the installation of the quartz-resin-based tiles and can be valuable resources to installers.

Please refer to the document VICOSTONE Flooring/Tiling Manual for further recommendations.

2. BASIC GUIDELINE FOR FLOORING AND TILING

a. Preparation

The support surface must be clean, flat and level without any cracks.

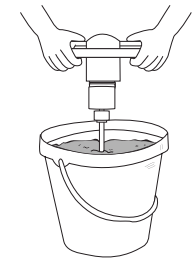
The ideal temperature ranges from 10 C to 35 C (50 F to 95 F). Lower temperatures will slow down the curing progress, while higher temperature will cause the substrate to dry too fast and may affect the quality of installation.

If the floor surface is getting too hot, moisten it with water or a damp cloth.

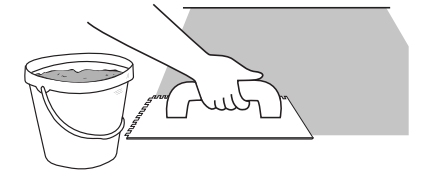
Clean the tiles to remove dirt, grease and stains. Make sure that the tiles are not bowed.

b. Instructions for Flooring and Tiling

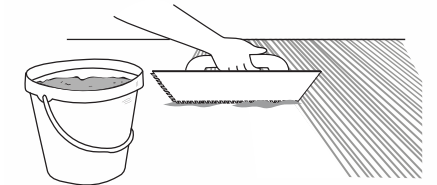
Step 1: Mix the adhesive in a clean container. The use of a mixer drill at a moderate speed is recommended to ensure the consistency of the adhesive. Remixing the adhesive or adding water for extended use is not recommended.



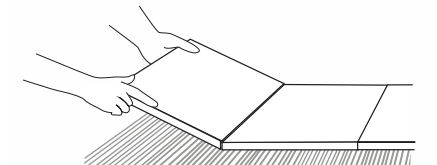
Step 2: Use a notched trowel to spread the adhesive mixture evenly onto the floor surface. Check the tackiness of the adhesive layer by hand.



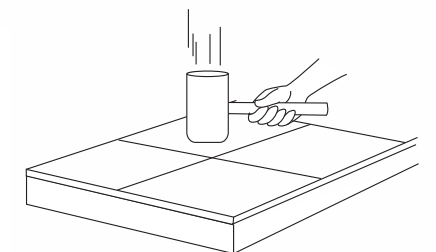
Step 3: Comb the adhesive in one straight direction to ensure uniform application. Remove excess adhesive with a grout float and put it back into the container.



Step 4: Lay the tiles one after another and add tile spacers to ensure equal gaps. Align the tiles within the curing time of the adhesive.



Step 5: Use a rubber mallet to ensure good adhesion between the tiles and the floor. Allow the adhesive to dry for at least 24 hours or as recommended by the manufacturer.



Recommendations:

- The adhesive should be applied using the double-bonding method, which means that the adhesive should be applied to back of the tile and the support surface.
- Follow the instructions from the adhesive’s manufacturer on how to carry out grouting in a proper way.
- Joint width: Tiles must always be laid with a space of at least 3 mm between tiles. When using large-size tiles, the space must be increased adequately.

Sizes	300x300mm	600x600mm	900x900mm	120x120mm
Joint width	3mm	4mm	6mm	8mm

- Create expansion joints of 8-10 mm (0.3-0.4 in) every 18-20 m2 or as dictated by applicable national law for thermal expansion. In addition, always leave a 5 mm perimeter gap for adhesive and expansion when installing tiles in a room.



VII. CLADDING/ LAMINATION

1. FURNITURE CLADDING/LAMINATION

1.1. PREPARATIONs

Preparation for the cladded items:

- Clean any existing dirt or stains on the surface (dust, oil, or other contaminants) of the cladded items.
- The surface must be cleaned, dried and free of cracks prior to the installation.

Preparation for VICOSTONE® Ultrathin pieces:

- Clean any existing dirt or stains on the surface (dust, oil, or other contaminants)
- Keep the stone pieces on an even, flat surface. Make sure that the pieces are not bowed.

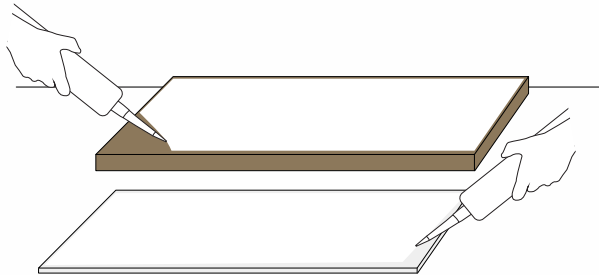
Prepare the suitable adhesive for the material of cladded items (refer to Section 1 of Part VIII for additional recommendations).

1.2. INSTRUCTION FOR CLADDING/LAMINATION

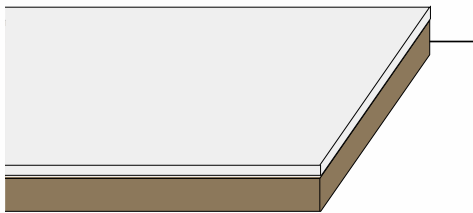
Step 1: Put the items to be cladded on a flat support base.



Step 2: Spread the adhesive evenly to cover the whole surface of the stone pieces and the clad-ded items.



Step 3: Put the stone pieces on the cladded items and gently press the pieces to evenly spread the adhesive.

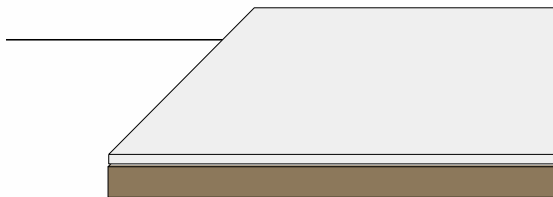


Step 4: Secure the stone pieces and the cladded items with clamp and suspender to ensure good adhesion. Use rubber matting or similar protection to avoid damaging the finished surface.



Step 5: Remove all excess adhesive and clean the materials.

Step 6: After the adhesive is dry, release the clamp and remove the suspender. Wait for at least one hour before proceeding to finish the work.



2. BENDING APPLICATION

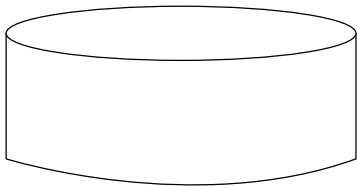
2.1. PREPARATION

Ensure that the surface that the stone will be laminated on is clean, dry, even and free of cracks.
Use a cleaning rag and denatured alcohol to remove the grease and dirt on the surface.
Prepare the suitable adhesive for the material of cladded items (refer to Section 1 of Part VIII for more recommendations).

2.2. INSTRUCTIONS ON BENDING AND LAMINATING

Step 1: Heat up the stone pieces to be bent with an oven, boiling water or torch.

- Recommended heating temperature: Approximately 100 C (212 F)
- Cooling duration: 10 to 15 minutes



Step 2: Spread the adhesive evenly to create a 1 mm thick layer between the laminated surface and the stone piece. Wait 1 to 2 minutes for the adhesive to dry.

Step 3: Use clamps to fix the stone piece on the laminated surface. Then use a thin steel plate as a bending tool to slowly apply the stone piece to the laminated surface. Continue until the whole laminated surface is covered. Use rubber matting or similar protection to avoid damaging the finished surface.



Recommendations:

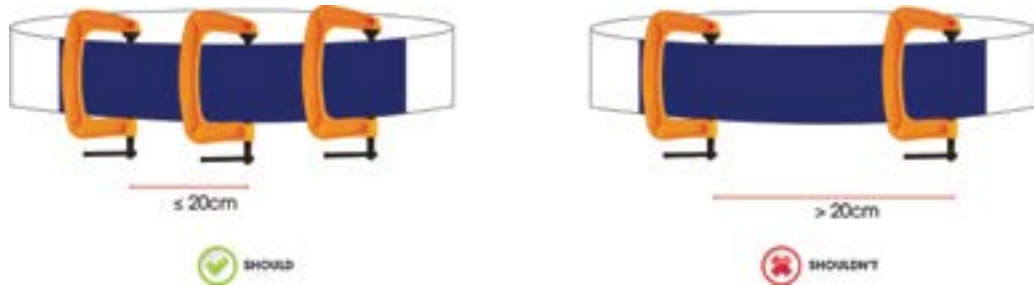
- Clamp fixing duration: 12 - 15 minutes



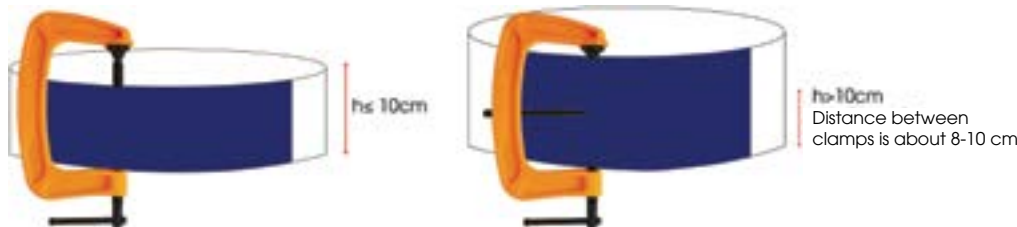
- Use a small rubber piece to keep the clamp from contacting directly with the stone pieces to prevent cracks or scratches.



- Keep a consistent and appropriate distance between clamps up to a maximum of 20 cm.



- Use the appropriate clamp depending on the size of the laminated surface.



The ability to bend stone pieces will vary due to the formulation and grain size of each VICOSTONE® Ultrathin color. Please refer to the following table for details:

Width of Stone piece (L), mm	Maximum Bending Radius (mm)			
	BQ5290 - Nube BQ5862 - Oceanid BQ5990 - White Fantasy	BQ5260 - Beton BQ5861 - Genio BQ5261 - Materica BQ5970 - Meteor Garden	BQ5291 - Rusty BQ5860 - Corazon	BQ5730 - Gota De Vida BQ5731 - Lombardy Grey BQ5732 - Terra Blue
$L \leq 5$	$R \geq 300$	$R \geq 350$	$R \geq 400$	$R \geq 450$
$5 < L \leq 10$	$R \geq 350$	$R \geq 400$	$R \geq 450$	$R \geq 500$
$10 < L \leq 15$	$R \geq 400$	$R \geq 450$	$R \geq 500$	$R \geq 550$
$15 < L \leq 20$	$R \geq 450$	$R \geq 500$	$R \geq 550$	$R \geq 600$
$20 < L \leq 25$	$R \geq 500$	$R \geq 550$	$R \geq 600$	$R \geq 650$
$25 < L \leq 30$	$R \geq 550$	$R \geq 600$	$R \geq 650$	$R \geq 700$
$30 < L \leq 35$	$R \geq 600$	$R \geq 650$	$R \geq 700$	$R \geq 750$
$35 < L \leq 40$	$R \geq 650$	$R \geq 700$	$R \geq 750$	$R \geq 800$
$40 < L \leq 45$	$R \geq 700$	$R \geq 750$	$R \geq 800$	$R \geq 850$
$50 < L \leq 55$	$R \geq 750$	$R \geq 800$	$R \geq 850$	$R \geq 900$
$L \geq 55$	$R \geq 800$	$R \geq 850$	$R \geq 900$	$R \geq 950$



VIII. GLUES

1. RECOMMENDED ADHESIVE FOR BONDING DIFFERENT MATERIALS.

No.	Bonding Materials	Adhesive	Product name	Traits	Producer	Note
1	VICOSTONE® Ultrathin & Concrete	Polyurethane	Akepur 230	- Porous cream - Working time: 4-6min - Grip time: 30-50p	Akemi	2 colors, black and white
			Akepur 240	- Porous cream - Working time: 3-5min - Grip time: 20-40p	Akemi	2 colors, black and white
		Epoxy	Akepox 3015	- Liquid - Working time: 3-5min - Grip time: 20-40p	Akemi	Black
2	VICOSTONE® Ultrathin & Other Stones (granite, marble, engineered stone..)	Polyurethane	Akepur 230	- Porous cream - Working time: 4-6min - Grip time: 30-50p	Akemi	2 colors, black and white
			Akepur 240	- Porous cream - Working time: 3-5min - Grip time: 20-40p	Akemi	2 colors, black and white
		Epoxy	Akepox 3015	- Liquid - Working time: 3-5min - Grip time: 20-40p	Akemi	Black

No.	Bonding Materials	Adhesive	Product name	Traits	Producer	Note
3	VICOSTONE® Ultrathin & Wood	Polyurethane	Akepur 230	- Porous cream - Working time: 4-6min - Grip time: 30-50p	Akemi	2 colors, black and white
			Akepur 240	- Porous cream - Working time: 3-5min - Grip time: 20-40p	Akemi	2 colors, black and white
		Epoxy	Akepox 3015	- Liquid - Working time: 3-5min - Grip time: 20-40p	Akemi	Black
		PU Glue	Titebond III	- Liquid - Working time: 8-10min - Grip time: 20-25p	Titebond	Yellow
4	VICOSTONE® Ultrathin & Aluminum	Polyurethane	Akepur 230	- Porous cream - Working time: 4-6min - Grip time: 30-50p	Akemi	2 colors, black and white
			Akepur 240	- Porous cream - Working time: 3-5min - Grip time: 20-40p	Akemi	2 colors, black and white
		Epoxy	Akepox 3015	- Liquid - Working time: 3-5min - Grip time: 20-40p	Akemi	Black
5	VICOSTONE® Ultrathin vs Other types of metal	Polyurethane	Akepur 230	- Porous cream - Working time: 4-6min - Grip time: 30-50p	Akemi	2 colors, black and white
			Akepur 240	- Porous cream - Working time: 3-5min - Grip time: 20-40p	Akemi	2 colors, black and white
		Epoxy	Akepox 3015	- Liquid - Working time: 3-5min - Grip time: 20-40p	Akemi	Black

2. MATCHING ADHESIVE COLOR FOR VICOSTONE® ULTRA-THIN PRODUCTS

No.	Base material	Product	Producer	Note
1	Silicone	Mapesil AC	Mapei	<ul style="list-style-type: none">- 26 colors with transparent color (has color palette to choose from)- Good stickiness on glasses, ceramic and processed aluminium- Also excellent on concrete, wood, metal, painted surface, plastic and rubber  <ul style="list-style-type: none">- 7 colors and transparent color (has color palette to choose from)- Using on Concrete, wood, ceramic tile, metal, glass, PVC and polycarbonate sheets Used on concrete, wood, ceramic, metal, glass, PVC and poly carbonates surfaces
		Mapesil LM	Mapei	
2	Epoxy - Polyurethane	Mapectex PU20	Mapei	<ul style="list-style-type: none">- Very excellent on concrete, ceramic and metal- Gray
		Mapectex PU21	Mapei	
		Mapectex PU30	Mapei	
		Mapectex foam	Mapei	
3	Epoxy	Akemi color bond	Akemi	<ul style="list-style-type: none">- 52 colors 

IX. CARE & MAINTENANCE

VICOSTONE® Ultrathin is a high quality, low maintenance and extremely low porosity product that is stain, scratch and heat resistant. However, VICOSTONE® Ultrathin is not indestructible or damage proof and does require minimum care and maintenance. The following guidelines will help keep your surface in excellent condition for many years.

1. REGULAR CLEANING

VICOSTONE® Ultrathin surfaces strongly resist stains caused by fruit juices, liquid food coloring, coffee, tea, wine, grapes, soft drinks, paints, nail polish, automotive fluids, and permanent markers. Immediately clean up any stains or messes with a cloth or non-scratch sponge, dish soap and warm water. Make sure to rinse thoroughly.

A mixture of one 1 part dish soap or mild detergent to 5 parts warm tap water (50-60 C or 122-140 F) is ideal for normal cleaning of VICOSTONE® Ultrathin (both floorings and countertops). Daily cleaning is recommended to avoid dirt buildup and stubborn staining.



2. CLEANING STUBBORN STAINS

For stubborn spills and stains, substitute a mild, non-abrasive household cleanser with a neutral pH (between 6 and 8) for dish soap. Start with a dilution of one part cleanser to five parts warm water (50-60 C or 122-140 F) and follow the directions from the cleanser's manufacturer.

Recommendation: Stubborn stains may leave light marks or slight discolorations on the surface. Test on a small, less conspicuous area of the surface before trying a more powerful cleaning agent. If there is no negative reaction, then proceed to clean the affected area. The same caution should be applied for a cleaning agent that has been kept for a long time without use.



3. DRIED RESIDUE

For food, chewing gum, nail polish, paint or any substance that has strongly adhered to the VICOSTONE® Ultrathin surface, simply scrape it away with a sharp blade or plastic putty knife. Metal blades may leave gray marks on the surface which can be easily removed with an ordinary scouring pad or a white pencil eraser. Make sure to rinse thoroughly.



4. RESISTANCE TO IMPACT

One of the characteristics that makes VICOSTONE® Ultrathin stand out is its high impact resistance. However, users are recommended to avoid standing or putting excess weight on the surface, especially on areas that might be slightly weaker after fabrication like cutouts, pointed corners and fine edges.

5. RESISTANCE TO SCRATCH

With a score of seven on the Mohs scale of mineral hardness, quartz is highly resistant to scratches. However, a cutting board should always be used for food preparation to keep surfaces in excellent condition. Never cut directly on the VICOSTONE® Ultrathin surface.



6. RESISTANCE TO HEAT

VICOSTONE® Ultrathin is designed and manufactured to withstand moderate heat. VICOSTONE® Ultrathin is not heat proof. Thermal shock resistance increases with the thickness of the surface. A slab with the thickness of 30 mm (1.18 in) is more resistant than a 12 mm (0.5 in) slab. Like any composite material, VICOSTONE® Ultrathin may be damaged by a sudden or prolonged exposure to high temperatures, mainly at the edges and cutouts. High heat in certain situations

can cause cracks. To prevent thermal shock, discoloration or other damage, it is necessary to use insulating pads, trivets or towels when placing hot objects on the surface. Do not expose the surface to open flames and avoid prolonged contact with hot cooking appliances. Always use a hot pad, trivet, cutting board or other spacing buffer when using appliances like electric frying pans, slow cookers, pressure cookers or roaster ovens.



7. EXPOSURE TO CHEMICALS AND SOLVENTS

VICOSTONE® Ultrathin can be permanently damaged by prolonged exposure to strong chemicals and solvents. Do not use acetone, lacquer thinner, paint thinner, glue stripper or any product containing trichloroethane or methylene chloride to clean your countertop.

8. EXPOSURE TO DIRECT SUNLIGHT

When exposed to direct sunlight, VICOSTONE® Ultrathin may result in color change and warping. Avoid direct sunlight over a prolonged period. VICOSTONE® Ultrathin is meant for indoor use only.

9. MAINTENANCE FOR FLOORS

The use of VICOSTONE® Ultrathin as flooring will require more attention to keep its original look. Please note that use of VICOSTONE® Ultrathin is not covered under VICOSTONE's warranty. Dust, grit and barrier materials from the floors should be removed on a daily basis by sweeping with a soft brush and when necessary by using machine. Sand can scratch a quartz based tile floor and the surface should be always be kept free of dust, sand and soil. VICOSTONE® Ultrathin can be easily cleaned with warm water, a mild household detergent and a standard mop. Make sure the floor is completely dry before walking on it.



10. VICOSTONE® CLEANSER

VICOSTONE® Cleanser has been specially designed and formulated for removal of extra stubborn stains without compromising the surface of VICOSTONE® Ultrathin.

How to use VICOSTONE® Cleanser?

1. Shake the bottle well before use.
2. Dilute VICOSTONE® Cleanser with 5 parts water to 1 part cleanser before applying to the surface of VICOSTONE® Ultrathin. Apply a generous amount of diluted cleanser directly to the problem area with a microfiber cloth. Gently wipe away with a dry cloth or paper towel.
3. If the stain or mess was not removed, repeat the previous step. Wait 20 minutes between each application.
4. Once the stain or mess is removed, thoroughly rinse the surface with water to ensure any cleanser residue is also removed from the surface.

Recommendations: VICOSTONE® Cleanser should be used to remove the extra stubborn stains which can't be removed with a mild detergent. Do not use VICOSTONE® Cleanser as a daily cleaning method because it may leave a light mark or very slight discoloration on the surface. It may also dull or damage the surface's lustrous finish.





Add: Hoa Lac Hi-Tech Park, Thach That, Ha Noi, Viet Nam

Phone: +84 2433 685 826

Email: info@vicostone.com

Fax: +84 2433 686 652

Web: ultrathin.vicostone.com