



Science and technology
Achieve the beauty of refinement

M A M O | Architectural Stone Surfaces®

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M A M O | Architectural Stone Surfaces®



SERVICE
MANUAL SINTERED STONE

About MAMO

Explore the strength of the nature and art, and design for the future! Let great artists decorate your home.

MAMO is an Australian family business with over a decade of experience in distributing premium architectural stone surfaces across Australia. At MAMO's sintered stone division, we are proud to partner with NABEL, a leading manufacturer based in Hangzhou, China—renowned as the birthplace of Chinese pottery culture. NABEL boasts multiple world-leading production lines and a production scale of 100 million square meters, exporting to more than 110 countries and regions. With a global reputation for excellence, NABEL aims to become a globally leading provider of high-end decorative material systems.

We not only pursue excellent product quality, but also create a green and healthy living environment for our customers. We attach great importance to green development, energy conservation and emission reduction, and have positively turned from "traditional manufacturing" to "green intelligent manufacturing".

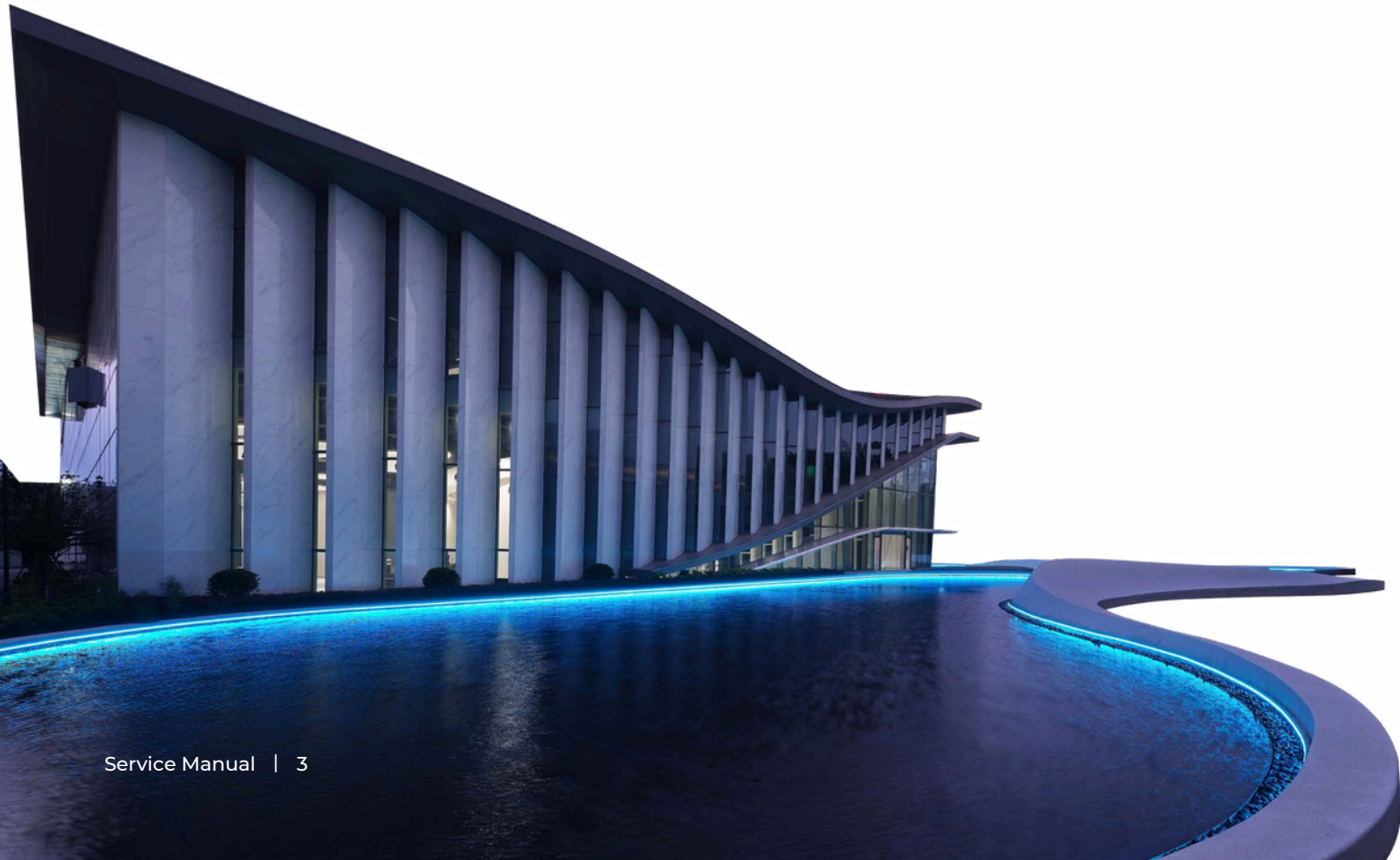


The Difference

We've constructed the flue gas emission system with ultra-low emissions to achieve low carbon and emission reduction. We've also attained recycle utilization of raw material during production. We keep practicing the idea of sustainable development and create green, digital and smart factories. We target at boosting the industry's green development and leading a healthy lifestyle with high-quality green products.

We take inspirations from the nature and adopt the concept of artistic houses to keep expanding the application fields and boundaries of sintered stone, covering wall, floor, countertop and furniture finishes.

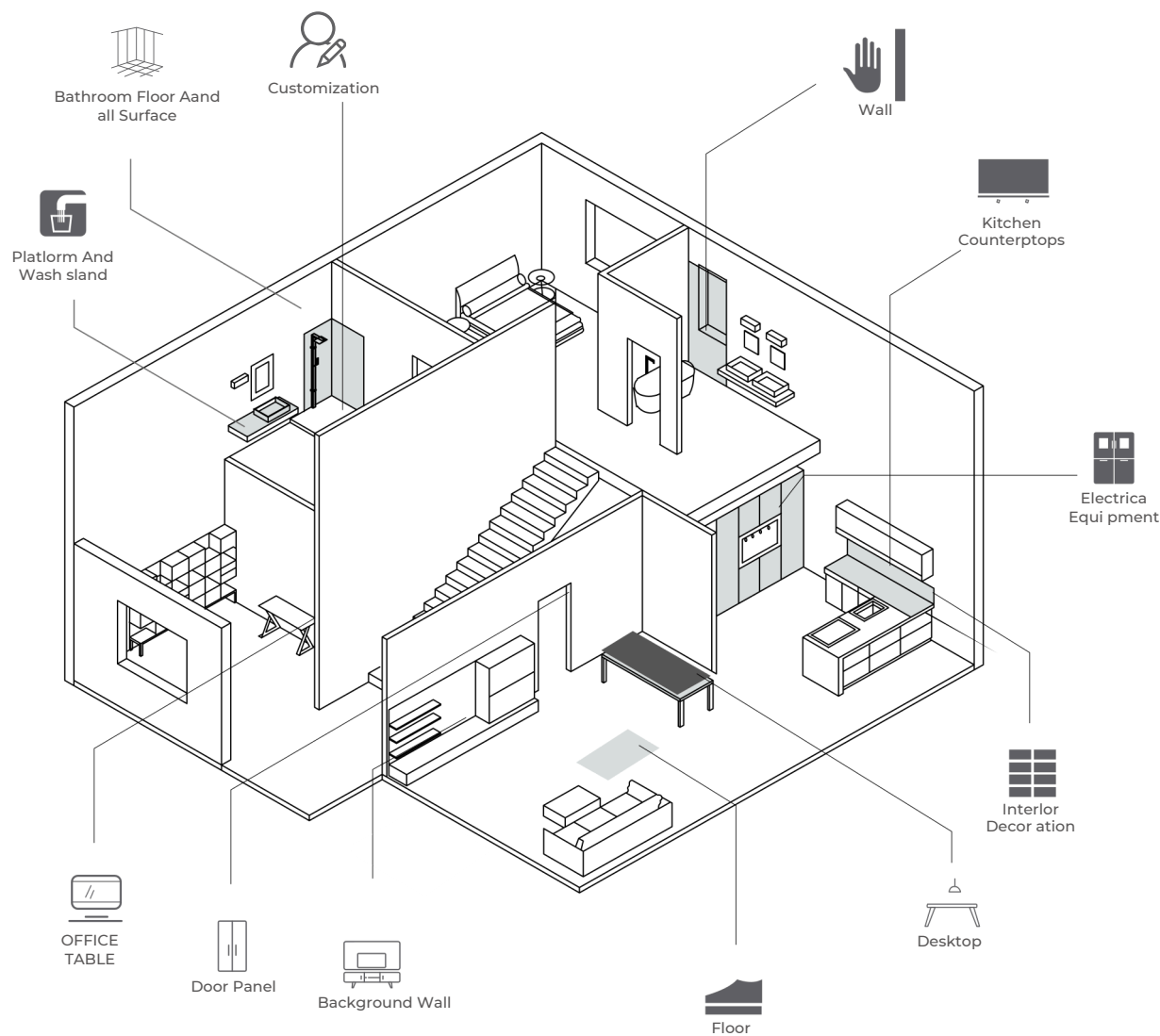
At MAMO, we're willing to share the sintered stone aesthetics with everyone, jointly explore the strength of the nature and art, and provide a more comfortable spatial experience that is closer to the nature for our customers!



Space Applications

MAMO’s sintered stone adopts MAMO’s patented formula, which has the characteristics of high density and hardness, and has super physical properties.

In daily applications, it can withstand the temperature change of sudden cooling and heating, and has superior properties such as abrasion resistance, scratch resistance, acid and alkali corrosion resistance, waterproof, antifouling. The surface is antibacterial and bacteriostatic, making it easier to clean.



Scenario Standard



Countertops



Kitchen Sinks



Kitchen Wall



Bathroom Cladding



Public Wall & Floors



Facades



Table



Stairs



Interior Wall

We Protect **Your Health**



Safe Antibacterial

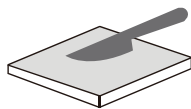
Suitable for all types of environments, especially in areas where bacteria are prone to reproduction. After adding antibacterial materials, cooking or grilling can be carried out between the surfaces of the stone slabs. MAMO Antibacterial Sintered Stone has better moisture and mold resistance than traditional plates, helping to eliminate the growth of bacteria such as Staphylococcus aureus and Escherichia coli.

Technical **Features**



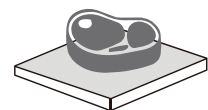
Easy to clean and maintain

Any dirt can be easily removed. Resistant to various chemical cleaning agents, such as bleach.



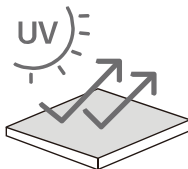
Ultra strong wear resistance and scratch resistance

The high hardness makes it difficult to scratch and grind.



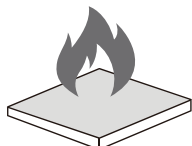
Suitable for contact with food

It does not contain any harmful substances and is suitable for contact with food. Food can be directly placed on the surface of the Sintered Stone for processing.



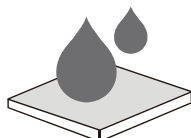
High UV resistance

100% natural, the color will not fade even when exposed to sunlight or other extreme weather conditions.



High temperature resistance

Not flammable, resistant to high temperatures, and will not release any harmful substances at high temperatures.



Low water absorption (less than 0.1%)

High strength, good compactness, and almost zero absorption level

SINTERED STONE



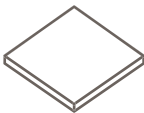
M A M O
- STONE ART -

SINTERED
STONE

Transportation standards

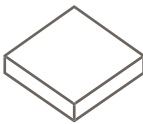
Scenario **Standard**

Dimensions (mm)	Product	Interior/exterior cladding	Countertops
3200x1600x20	●	●	●
3200x1600x12	●	●	●
3200x1600x6	●	●	
2700x1200x6	●	●	
2400x1200x9	●	●	●
2400x1200x6	●	●	
1600x1200x12	●	●	●



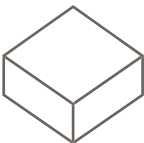
6mm

FULL-BODY THICKNESS
SIZES 3200x1600mm
2700x1200mm



12mm

FULL-BODY THICKNESS
SIZES 3200x1600mm



20mm

FULL-BODY THICKNESS
SIZES 3200x1600mm

1. PACKAGE

1.1 WOODEN A FRAME

MAMO Sintered Stone has several sizes' Wooden A Frame. Size 1: 3320x740x1900mm for 3200x1600mm Size 2: 2800x750x1925mm for 2700x1200mm Size 3: 2500x740x1950mm for 2400x1200mm & 1600*1200mm

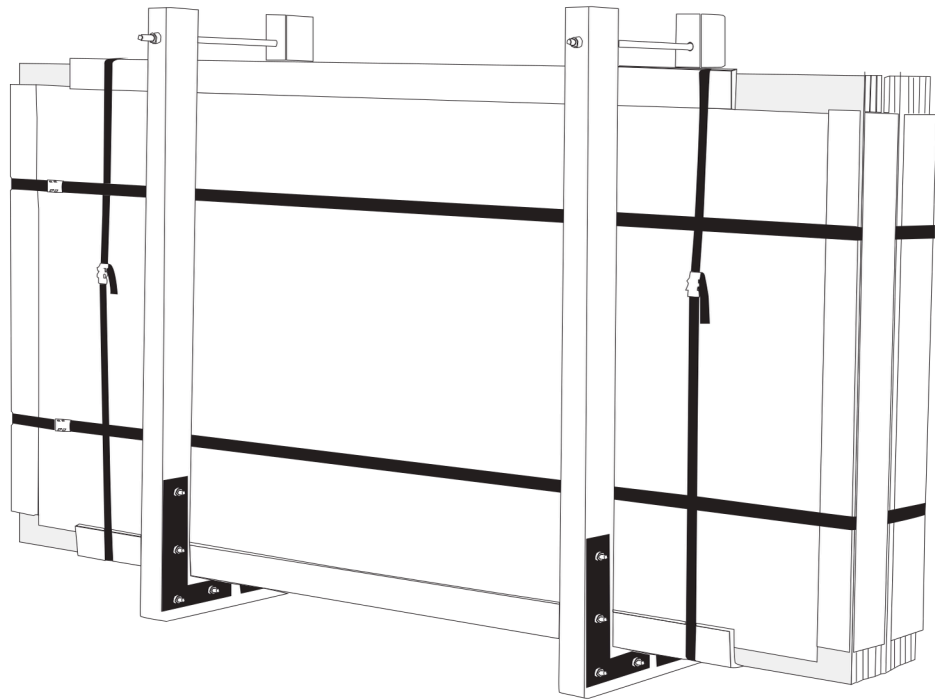


Size (mm)	Pcs/Ctn	Square Meters	Kgs/Ctn
3200x1600x20	12	61.44	3150
3200x1600x12	20	102.40	3150
3200x1600x6	40	204.80	2630
2700x1200x6	40	129.60	1930
2400x1200x9	35	100.80	2247
2400x1200x6	40	115.20	1712
1600x1200x12	40	76.80	2232

The maximum number of pallets and their gross weight for each A Frame packaging for each size

1.2 WOODEN BUNDLE

MAMO Sintered Stone's 3200*1600mm sizes could be packed on Wooden Bundle.



Size (mm)	Pcs/Ctn	Square Meters	Kgs/Ctn
3200x1600x20	13	66.56	3330
3200x1600x12	23	117.76	3530
3200x1600x6	46	235.52	2932

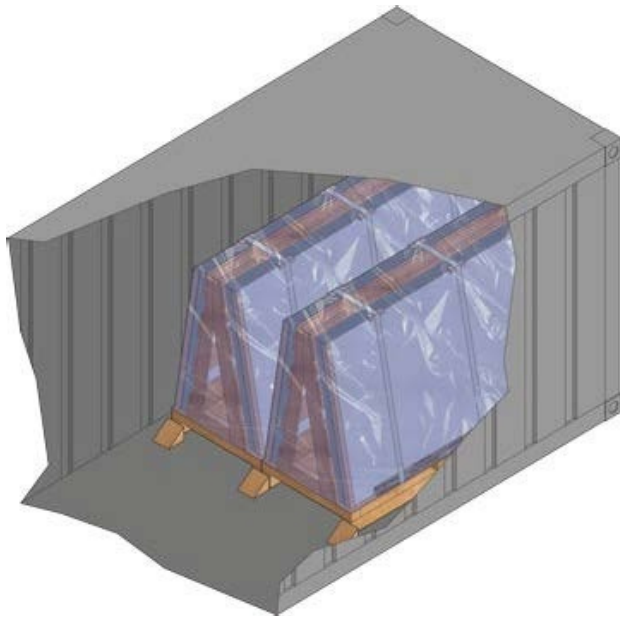
The maximum number of pallets and their gross weight for each BUNDLE packaging for each size

1.2 WOODEN BUNDLE

MAMO Sintered Stone can be transported in 20 foot or 40 foot containers, depending on the type of container, capacity, and destination country.

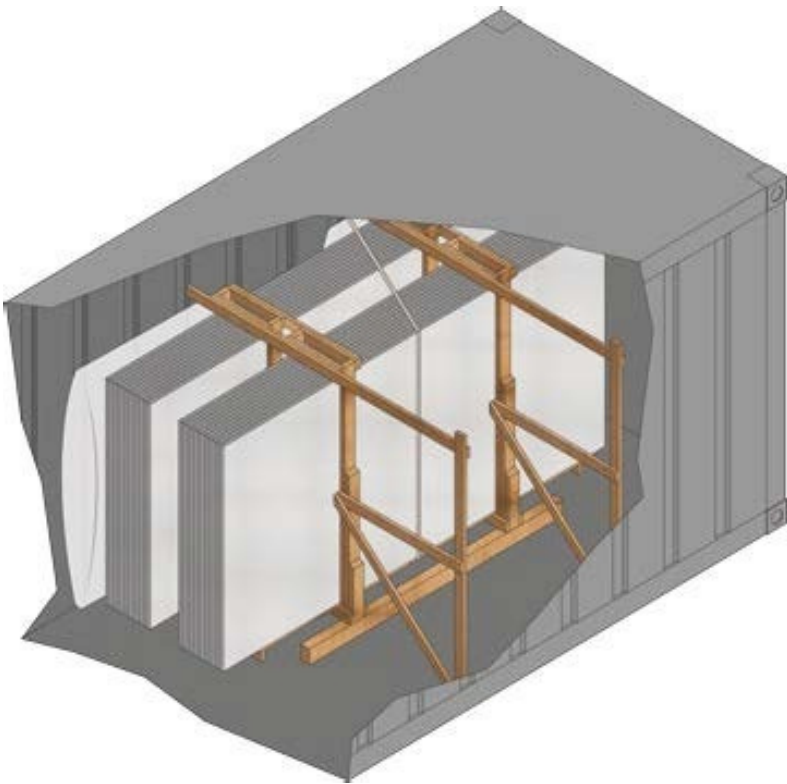
These instructions must be operated in accordance with the current regulations of the destination country/region.

The following are our products of different sizes. How many can be loaded in a 20 foot container or a 40 foot container, respectively. (Gross weight less than 26000 KGS)



A FRAME

Size (mm)	20 Foot Container	40 Foot Container
3200x1600x20	3 A Frames 36 Pcs 9450 KGS 3	9 A Frames 98 Pcs 25850 KGS
3200x1600x12	A Frames 60 Pcs 9450 KGS	9 A Frames 164 Pcs 25950 KGS
3200x1600x6	6 A Frames 240 Pcs 15780 KGS	9 A Frames 360 Pcs 23670 KGS
2700x1200x6	6 A Frames 240 Pcs 11580 KGS	12 A Frames 480 Pcs 23160 KGS
2400x1200x9	6 A Frames 210 Pcs 13482 KGS	12 A Frames 404 Pcs 25988 KGS
2400x1200x6	6 A Frames 240 Pcs 10272 KGS	12 A Frames 480 Pcs 20544 KGS
1600x1200x12	6 A Frames 240 Pcs 13392 KGS	12 A Frames 465 Pcs 25989 KGS



BUNDLE

Size (mm)	20 Foot Container	40 Foot Container
3200x1600x20	7 Bundles 91 Pcs 23310 KGS	/
3200x1600x12	7 Bundles 161 Pcs 24710 KGS	/
3200x1600x6	7 Bundles 322 Pcs 24710 KGS	/

2. Handling and storage

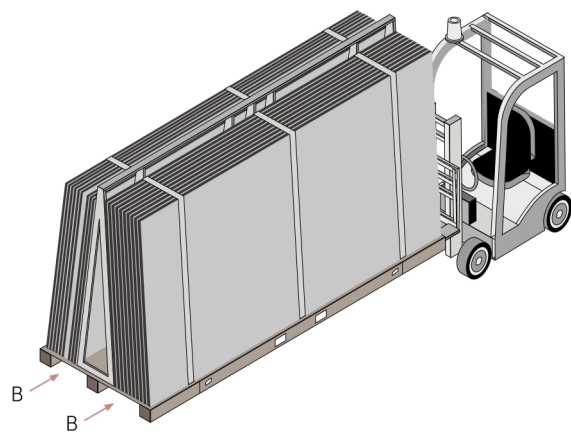
2.1 Moving A-Frames with a forklift

MAMO slabs must be treated under safe conditions to maintain their original appearance and prevent accidental damage. We suggest being extra careful during the processing phase to ensure that the area is clean and has no signs of movement.

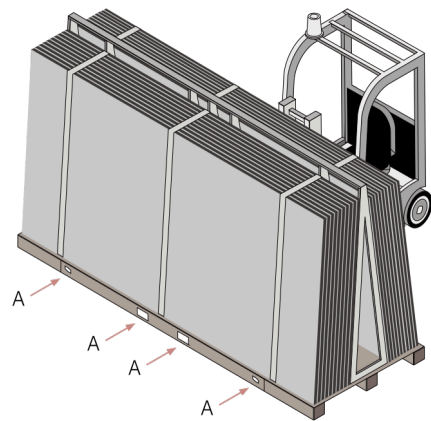
Before the handling phase, the A-frame must be loaded symmetrically to avoid problems of instability. The operator must verify that the slabs are secured to the A-frame with the specific hoops before beginning the handling process. It is important to be very careful when handling the material because the outer edges of slabs loaded onto the A-frames are not protected.

A-frames have two grab points for handling with the forklift:
"A" is the transversal grab point; center distance of at least 740mm.
"B" is the longitudinal grab point.

Use a forklift with the appropriate maximum load capacity. The laminated panels loaded on the A-frame at the warehouse or manufacturer's premises must preferably be handled using the "A" lateral gripping point. This means using at least 1200 mm long forks and forklifts to load the A-frame onto the 3200 mm side of the forklift. The capacity should be at least 3500 kilograms. If the decision is made to use the "B" grip, a forklift with a capacity of 3500 kilograms must be used, and the length of the forklift must be at least 2800 millimeters. Ensure that the load on the fork is balanced and stable, and does not sway. During the loading and unloading phase, insert the fork under the A-frame from the forklift and container using the two designated grip points "A" and "B" in the following paragraphs. During loading and unloading and subsequent transportation Even if it is one slab, use cloth or plastic clamps/straps to fix the slab to the A-frame. Do not use metal chains to secure the flat panel. Before releasing the material from the clamps that secure it to the A-frame, please ensure that the A-frame is on a horizontal surface to avoid any risk of slab falling.



A-frame forked in grab point B, using long forks at least 2800 mm



A-Frame inforcato dal punto di presa A with a space in-between of at least 740mm

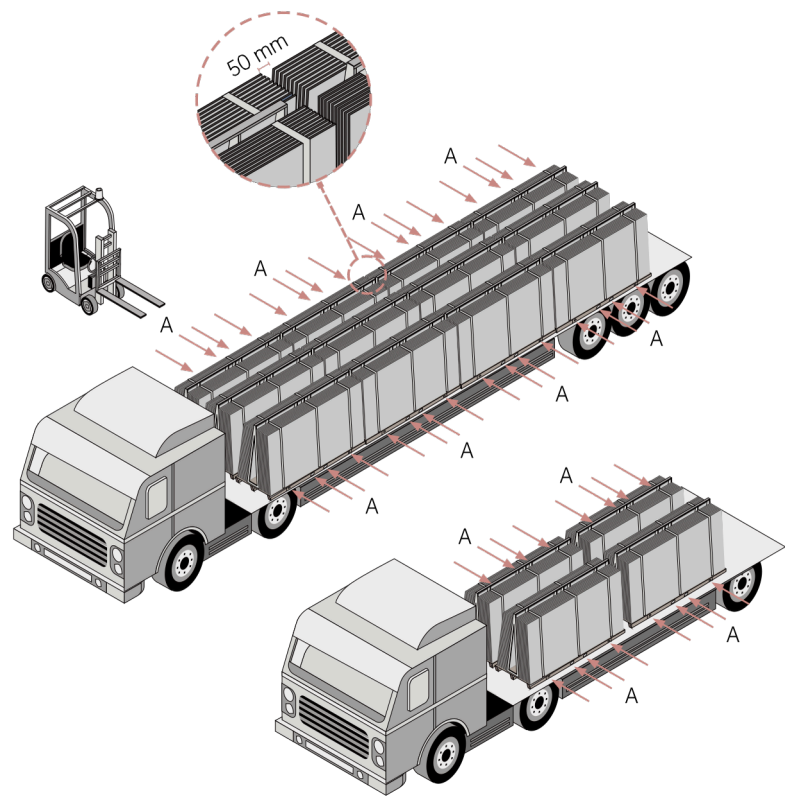
2.2 Loading/Unloading A-Frames on/from Lorries

To load or unload slabs on a lorry with an openable bed, position the lift truck forks under the A-frame in the two "A" grab points with a center distance of at least 740 mm.

Use forks with a minimum length of 1200 mm to and place the A-frame in a central position on the lorry.

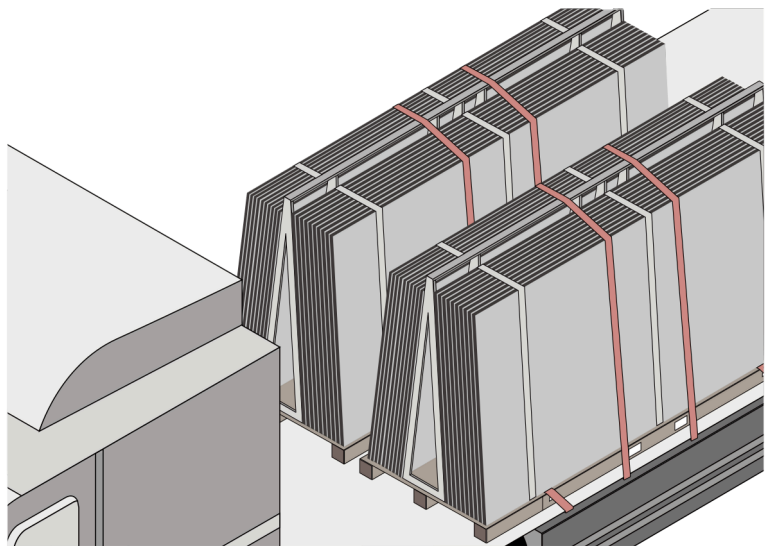
To safely transport slabs on lorries, fasten the A-frames to the lorry bed by securing them at the base of the wooden platform and also at the tallest point of the metal structure. Use suitable straps in polyester or similar materials to secure the A-frames. To load other rows of A-frames, make sure the distance between the slabs is at least 50 mm.

Before unloading, always check to see how the A-frames were blocked so that you can effectively remove those blocks.



When loading and unloading, the operator must pay attention to people in the surrounding areas and avoid instability of the load. For this reason, the load must always be kept low during transport and raised only when it is near enough to the lorry to be loaded.

Below is an example of loading an A-frame on a standard lorry 13.60 m in length.

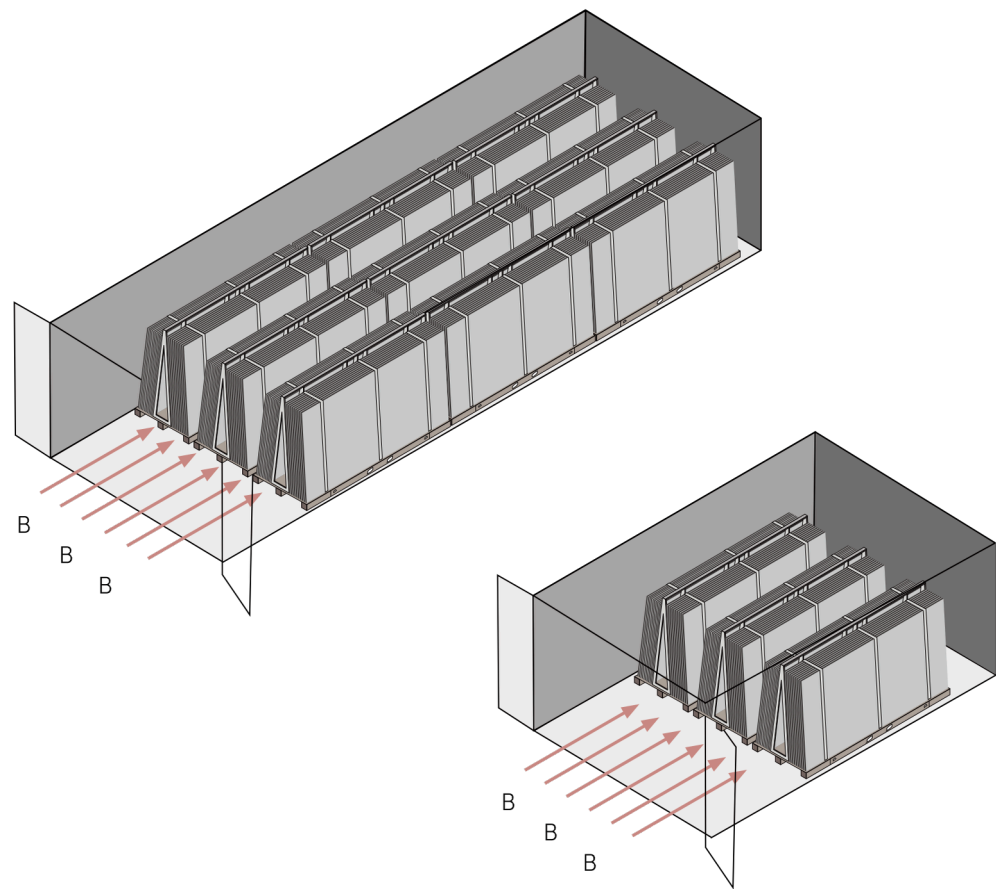


2.3 Loading/Unloading A-Frames into/from Containers

Use a pallet mover or forklift with 3500 kg capacity, with extensions of a minimum length of 2.80 m during the loading and unloading phases of the material if using a container. The operator handles the full A-frame, picking it up and lifting it from the two “B” grab points.

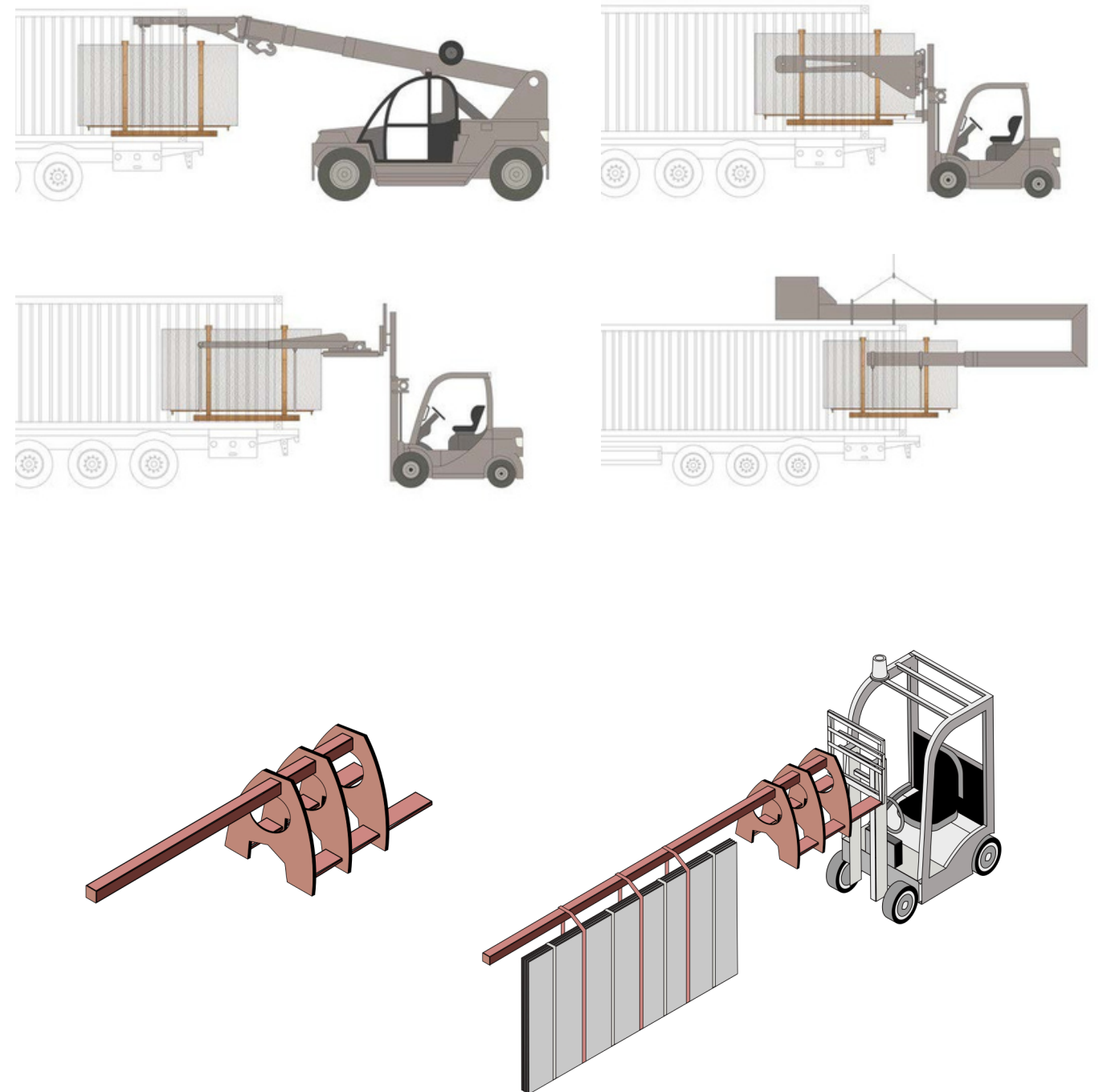
When loading, verify the correct stability of the material, and tie and fasten the A-frames together and to the cargo area. For safe transport in containers, fill the empty space between A-frames and rows of A-frames with airbags.

Before unloading, always check to see how the A-frames were blocked so that you can effectively remove those blocks. Outside the container, always handle the material by lifting the A-frames with the “A” grab points.



2.4 Loading/Unloading Bundles into/from Containers

For the unloading of the bundles, additionally to the pallet truck described above, there are also devices on the market that can be used with normal lifting equipment (cranes, forklifts, overhead cranes).



2.5 Processing a single slab

2.5.1 Handling with fixtures

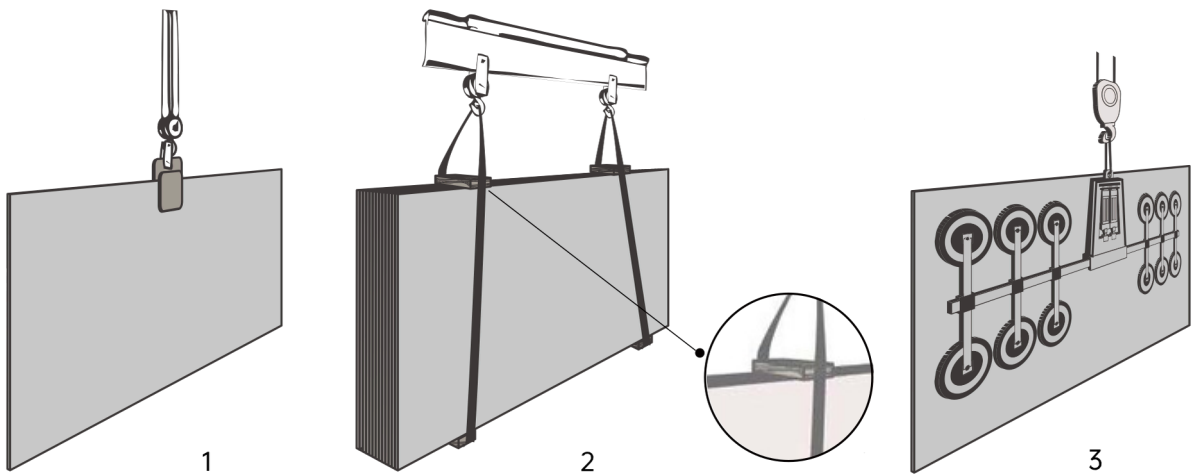
Slabs can be moved individually using rubber-coated canvas straps, rubber grippers or suction cups. Under no circumstances should steel chains or ropes be used as these may ruin the material.

To grip the individual slab, it is recommended to position the gripper at the load center to balance the weight and minimise oscillations (as shown in figure 1). When putting down a slab with the gripper, make sure that between what is being positioned and the support (other slab or floor) there are no empty spaces.

To grip multiple slabs, it is recommended to use a balancing frame connected to canvas straps spaced on the bottom and on top of the slabs by a wooden shim slightly longer than the slab pack (as shown in figure 2). In this way, the stress exerted during handling does not weigh on the slabs, preventing material breakage.

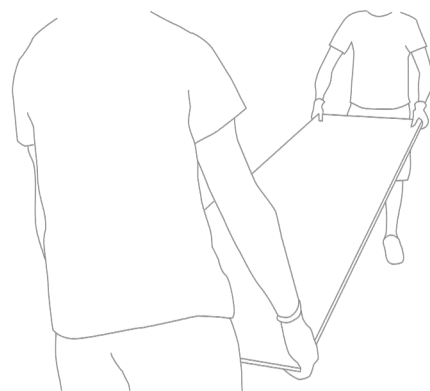
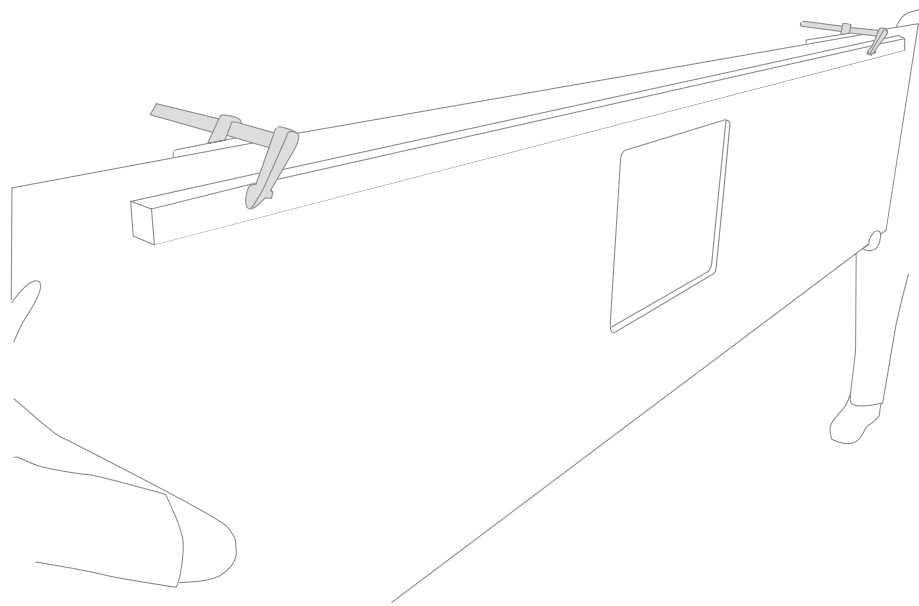
Handling using suction cups is permitted (as shown in figure 3), subject to verification of compatibility with the roughness of the surface.

Before proceeding, always ensure that the load to be handled is within the maximum capacity of the lifting equipment.

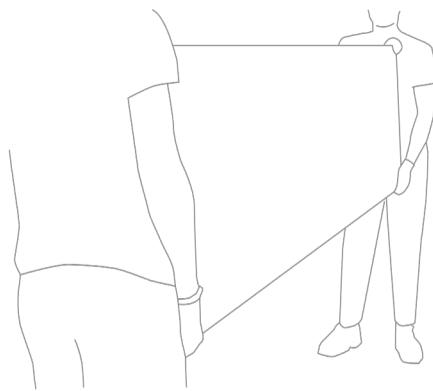


2.5.2 Manual handling

Follow the handling safety recommendations to avoid material damage during the handling process.

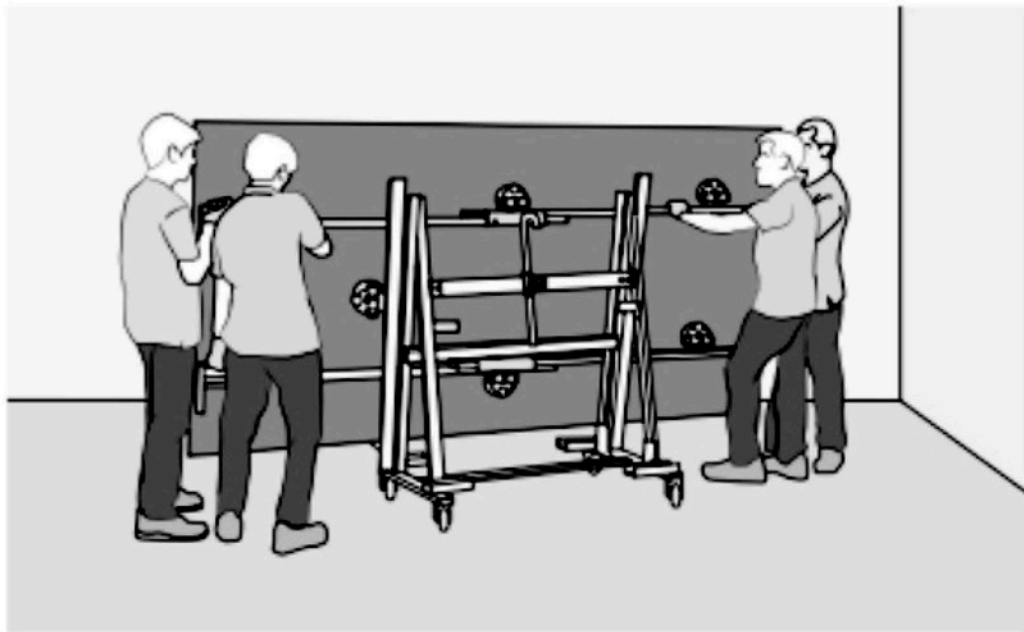
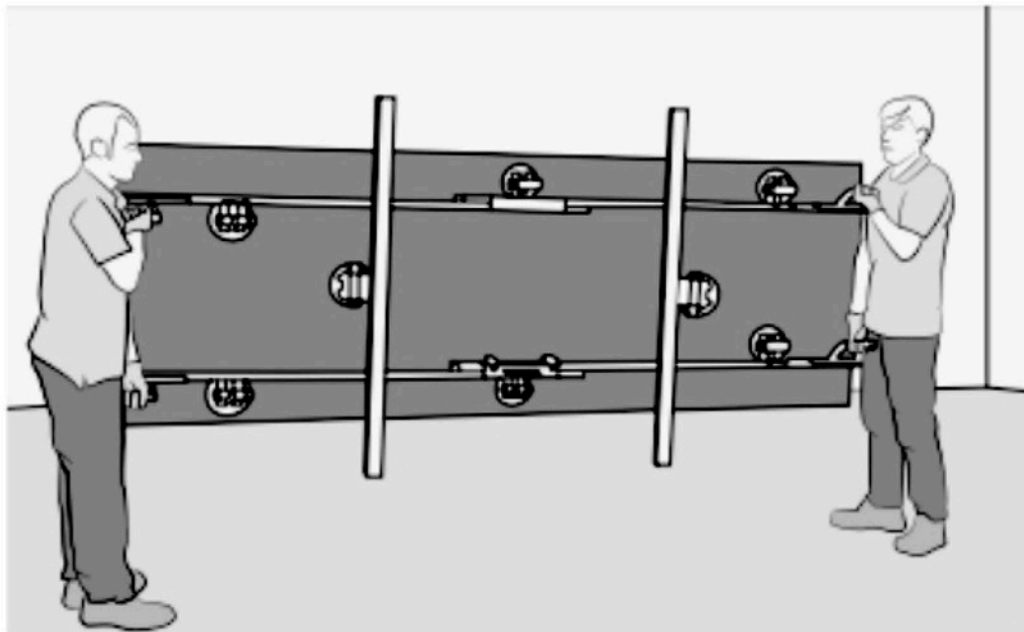


Incorrect



Correct

It is important to work with correct posture, avoiding strain on the lower back, and to use specific gloves to improve grip and avoid abrasions. To facilitate slab movement, especially on pieces weakened by holes or openings, and to facilitate installing the slabs on walls, special frames with suction pads are available. Use suitable systems for the dimensions of the slab to be moved. Keep the slab weight in mind and make sure you have enough personnel to install it properly.



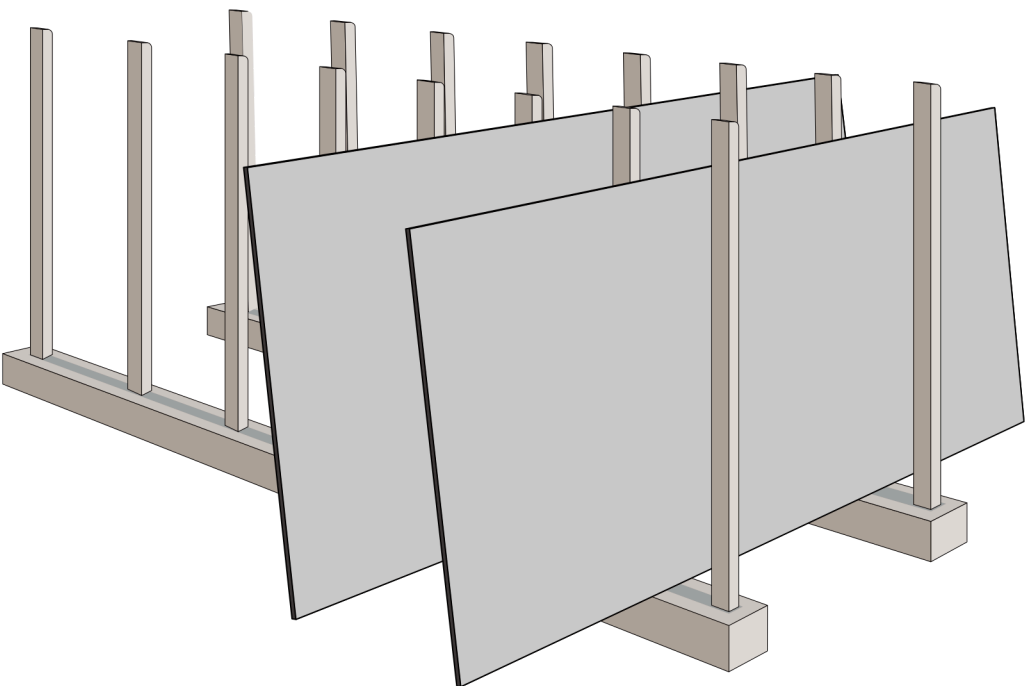
2.6 Storing the Slabs

MAMO slabs can be stocked in warehouses on specific supports and metal structures like tripods or racks, suitably constructed and with protective structures in wood, rubber or plastic where the slabs will be positioned vertically. The A-frame used for packaging the MAMO slabs can also be used to store them.

Safely store the material using dedicated wedges or belts to prevent sliding. If stored outside, it is advisable to make sure that the stability of the A-frame is guaranteed in case of harsh weather. The slabs set vertically on the A-frames will bend slightly when they are set down. This is not a defect of the product and does not compromise processing in any way. This bending disappears when the slab is set on a horizontal surface.

Regardless of the storage method used, we recommend not placing other materials, especially polished finishes, on MAMO slabs. If you need to place something on the slab, please use appropriate shims to separate the materials.

When storing polished finish slabs, if the wax coating cannot be guaranteed, or if the wax is not enough to prevent the board from contacting in the subsequent processing, insert shims between them.



When the slabs are transported on the A-frame, they are always fixed with at least two straps or woven straps. When it is necessary to remove the straps from the A-frame or package, the straps must be removed immediately before starting work.

Before removing the tie straps from the A-frame, one of the following two restraint systems must be used: a safety bar (U-shaped structure) or an upper restraint device (inverted U-shaped stop or similar device used for the upper part of the A-frame) to ensure that they do not fall on workers in the event of the board loosening from the A-frame.

Please remember that the piers and slabs have a high weight, so whenever they need to descend, never try to stop them. Never stand under a falling heavy object.

When using a bridge crane for transportation, it is necessary to maintain a safe distance from the goods being transported and consider the possibility of A-frame or slab falling. If the load must be guided, use ropes or similar devices. In the A-frame storage area, a 1-meter wide aisle should be left between the rows of A-frames.

Damaged parts may have very sharp edges. Wear gloves, cut resistant sleeves, and goggles whenever handling or processing slabs.

It is recommended to use an A-type frame or storage rack to store the slabs. When it is also recommended to store slabs on the A-frame, fix the already stored slabs with a ratchet belt.

Place the slab along the length direction on a beam with sufficient protection to prevent cracking of the slab.

When using A-shaped frames to support Sintered Stones, at least three support points are required for 5.8mm slabs, evenly distributed along the back of the slab; Suggest using complete supports - for example, unused granite or marble slabs with sufficient width. Avoid placing large boards on smaller ones:

U-shaped safety retainer



U-shaped safety retainer (inverted U-shaped)



Storage of MAMO slabs in the shop



3. Transport and installation of the finished countertop

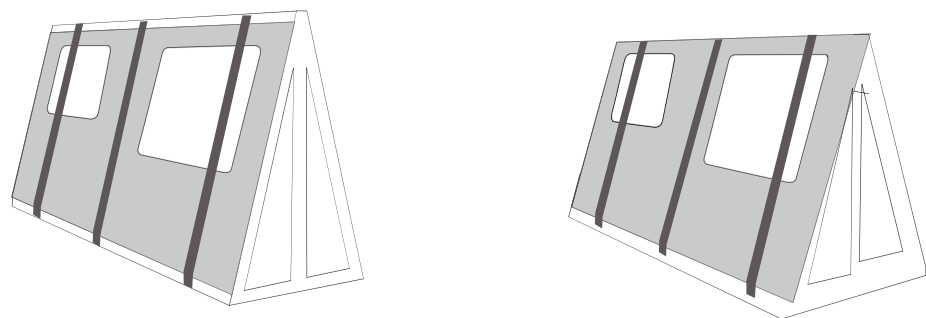
The supporting components must be able to support the entire surface of the parts during transportation. A support component that is too small may cause parts to break:



Correct



Incorrect



Correct



Incorrect

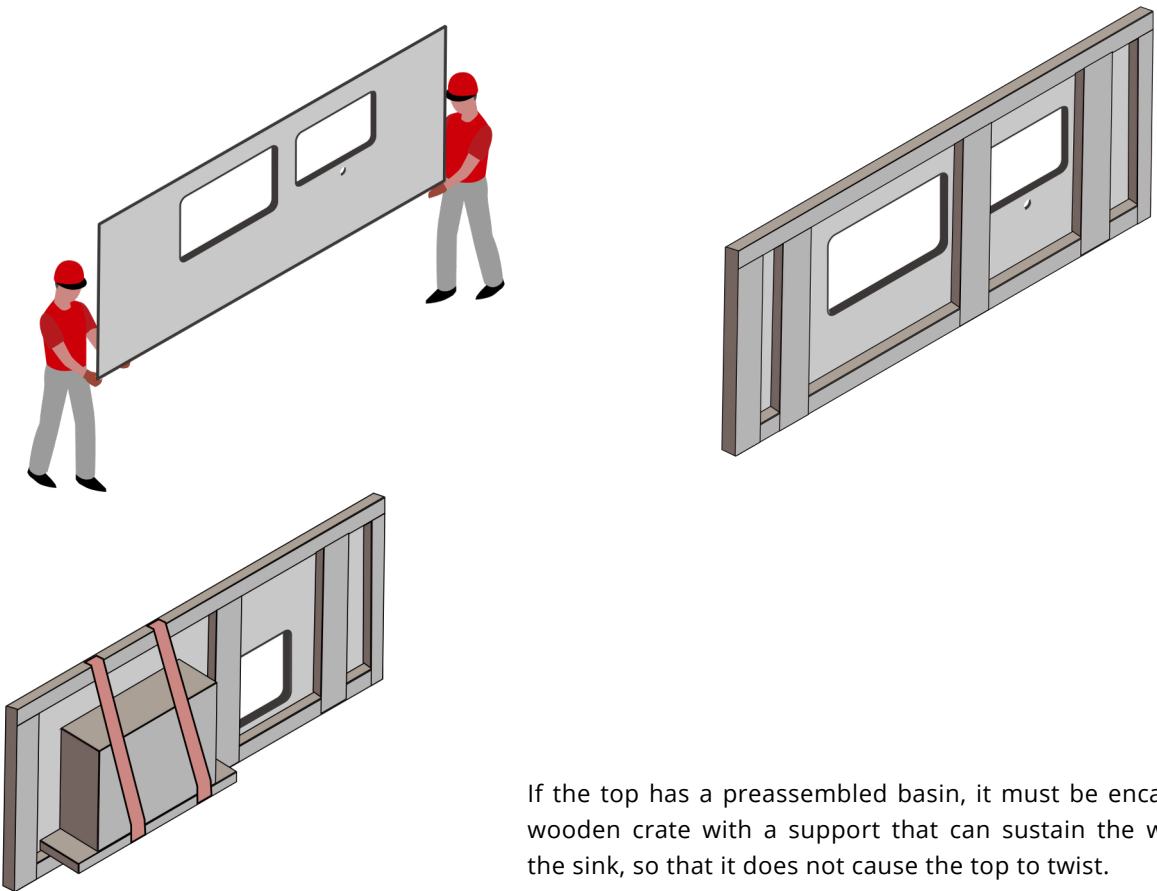
Regardless of the storage method, we recommend not placing other materials on the MAMO slab, especially on the polished surface. If it is necessary to place something on the board, separate the materials with appropriate barriers.

During handling, transport and installation of the finished countertop, remember to pay the utmost attention to possible twisting, torsion or impacts, in particular on the edges. Reviewing jobsite access with installers can assist in comfortable and efficient installation.

3.1 Packaging and transport

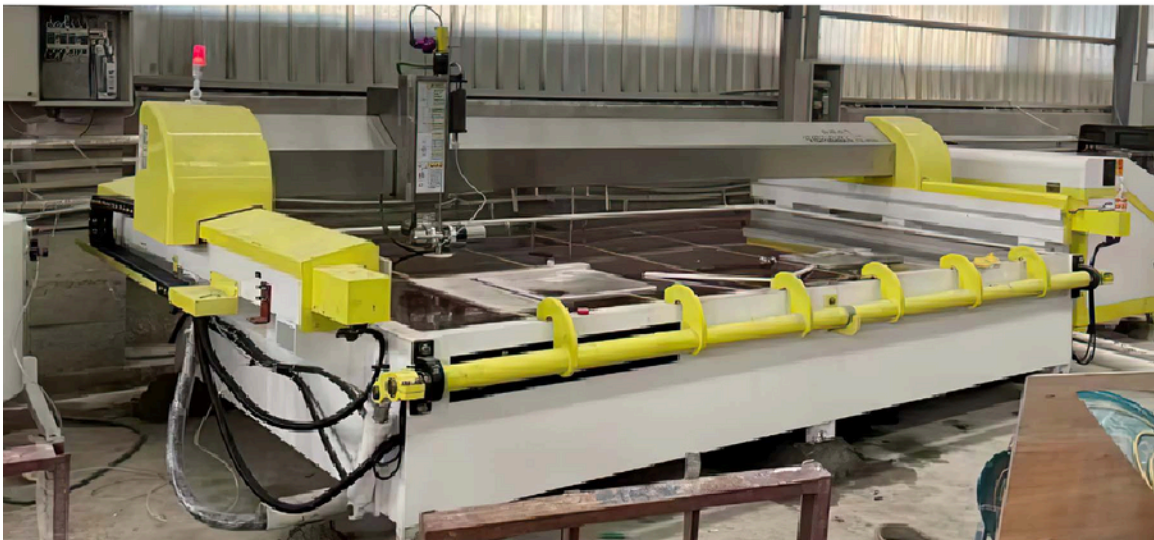
After finishing the processing, move the finished top into a vertical position and keep any holes towards the top. Never use the holes as lifting points, especially during transport, to prevent cracks or breakage.

We advise packing the countertop inside wooden crates or suitable frames and taking care that the edges and corners are protected with foam or polystyrene guards.



If the top has a preassembled basin, it must be encased in a wooden crate with a support that can sustain the weight of the sink, so that it does not cause the top to twist.

4. Bridge Saw Machine



Ultra dense beautiful porcelain

Ultra dense beauty porcelain is a new type of environmentally friendly beauty seam product that does not contain harmful substances such as formaldehyde and benzene. Excellent physical performance, characterized by waterproofing, mold resistance, stain resistance, wear resistance, and high hardness; Convenient construction and simple operation; Easy to clean and resistant to dirt and grime. This product has a soft luster and a strong color decoration effect, making the texture effect of well laid ceramic tiles more complete and elegant, high-end and elegant.

5. Processing and Cutting

5.1 Pre Processing Inspection

MAMO recommends deep-cleaning the slab and doing a meticulous visual inspection to check whether the slab complies with the quality requirements. Check for the following when carrying out the visual inspection.

- Fissures/Cracks
- Thickness
- Surface contamination
- Stains
- Shine variations
- Pinholes or blisters
- Slab to slab colour/tonality match
- Flatness/Warpage
- Imperfections

This should be the first step prior to starting production. Doing the inspection in a well lit area to identify possible imperfections not seen when flat is recommended.

*No claims will be accepted for installed or manufactured material when defects were already present upon delivery of the material. Stone masons are responsible for determining whether the slabs are adequate for use. If it is determined that the material is not of suitable quality, they should be exchanged before the slabs are cut or modified in any way.

A. Flatness/Warpage

To check the flatness of a slab, it should be positioned horizontally on a completely flat base. The flatness is measured by placing an aluminum rod or similar object on the surface of the slab, covering the entire width or length of the slab.

Determining warpage or flatness of an upright/vertical slab is not recommended.



MAXIMUM TOLERANCE IN THE SLAB WIDTH: 2 mm
MAXIMUM TOLERANCE IN THE SLAB LENGTH: 4 mm

B. Tone

The deviation of hue is more obvious in a single model with different thicknesses, because each thickness is produced in a different way. Before cutting, visually inspect the slab to ensure that the color tone of different slabs is acceptable. Perform this inspection under lighting conditions similar to the installation location. We suggest not merging slabs from different batches.

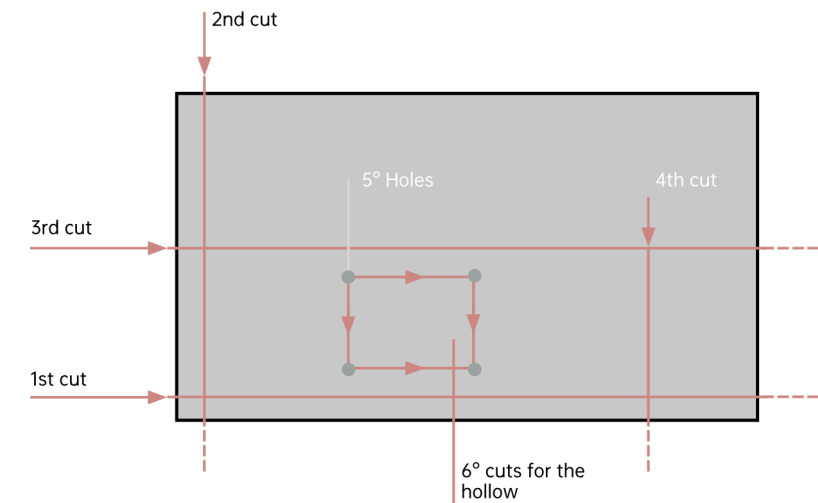
C. Slab Identification

Each slab has a label with important information related to each slab. The labels must be recorded for future reference.

5.2 Disc cutting

To cut the slab, use diamond cutting discs suitable for processing porcelain stoneware, which are in good condition, on industry approved machinery. Both segmented and non-segmented blades can be used. The advancement of the slab in the cutting process must be in the same direction as the disk rotation. The cut takes place through the erosion of the width proportional to the width of the disk.

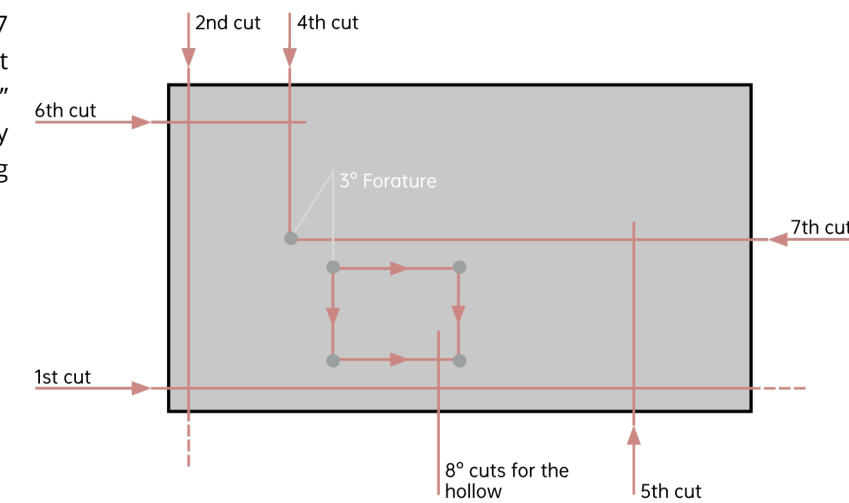
Here is an example of a cutting scheme that can be done with a disk cutting process.



5.2.1 Cutting Scheme

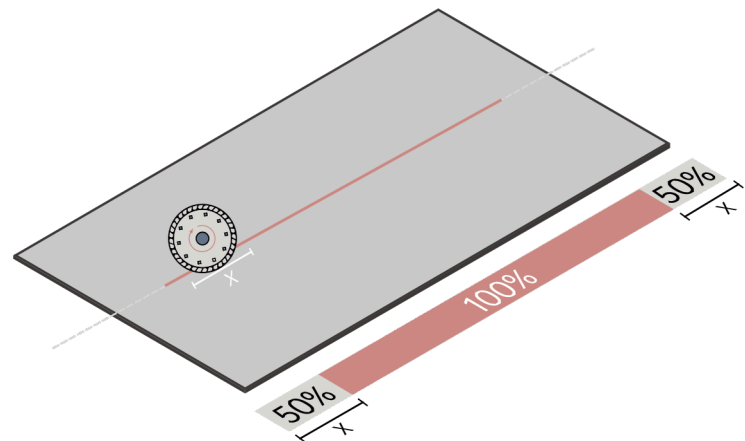
If you want to protect the piece of slab not being used to make the table or countertop, move the part above 4th cut before you start it. If you are making “L” shaped cuts or cutouts with a disk, first it is necessary to make a hole in correspondence of each corner and then make straight cuts. The last part of the cut near the hole can be done manually with a grinder.

When performing cuts 5 and 6, the disk must go past the intersection of cuts 7 and 4, respectively, for a length of at least the diameter of the disk. “L” shaped pieces must be handled very carefully to prevent torsion and twisting that would damage the slab.

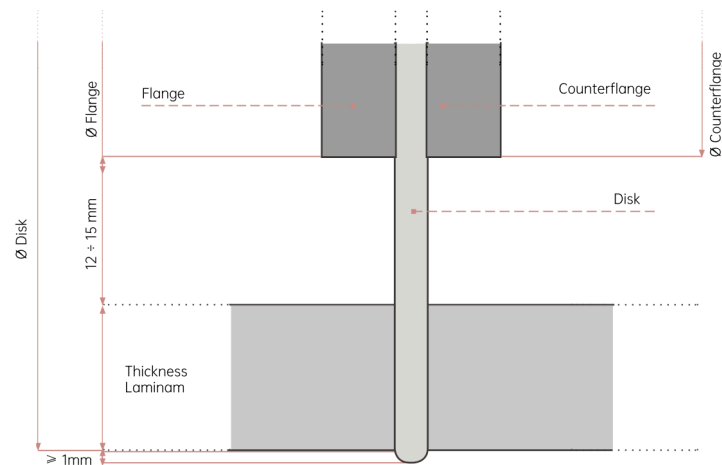


5.2.2 Indications

- Smaller disk diameters require greater rotation speeds applied to the mandrel.
- Slower feed rates produce higher quality cuts. Excessive speed could require making a larger bevel to correct imperfections caused on the edge.
- Cutting speed at the entry and exit points must always be reduced by 50% compared to full speed, for a length of at least the diameter of the disk.



- Given the hardness and strength of the material, it is necessary to turn the nozzles so that the water jet is pointed on the disk blade to guarantee cooling and in correspondence with the incision on the slab to remove debris from the cut.
- The disk must cut completely through the slab thickness and come out at least 1 mm on the other side.
- The process is successful if vibrations and movements of the slab are reduced to a minimum during the cutting processes. To limit these situations, we advise using a panel made of rubber or other suitable material that will not reduce the abrasive capacity of the disk.
- Set the machine correctly to obtain inclined cuts in the slab.
- To make a good quality inclined cut, we suggest reducing the disk diameter and using a disk with a reinforced core that can diminish bending of the disk and therefore reduce vibrations on the slab. As an alternative, apply a flange and counter flange to stabilize a disk that is too big.



5.2.3 Parameters

The parameters indicated below were suggested by the main producers of cutting disks which have tested MAMO slabs, considering that the cut be made in a single stroke with a disk in good condition.To obtain these parameters, tests were run on products with white, medium and black bases.

If the manufacturer, under his/her own responsibility, wants to adopt faster speeds than those indicated, we suggest carrying out several preliminary tests while keeping in mind that materials with a white base are generally more sensitive to increased speeds.

Periodically, assess the maintenance levels of the disk and replace it when it no longer guarantees a good quality cut, with reference to the parameters indicated. To guarantee longer disk life and better cutting quality, we suggest reviving the blade with a block of concrete or quartz.

Disk Cutting	Type of Cut	Disk Diameter mm	Rpm	Feed rate Mm / min	Infeed/outfeed speed
MAMO	Straight	350	1800/1900	1000/1400	Reduce by 50%
		400	1600/1800	1000/1400	
		500	1300/1400	1000/1400	
	Inclined	350	1800/1900	500/800	Reduce by 50%
		400	1600/1800	500/800	
		500	1300/1400	500/800	
MAMO	Straight	350	1800/1900	800/1000	Reduce by 50%
		400	1600/1800	800/1000	
		500	1300/1400	800/1000	
	Inclined	350	1800/1900	400/500	Reduce by 50%
		400	1600/1800	400/500	
		500	1300/1400	400/500	

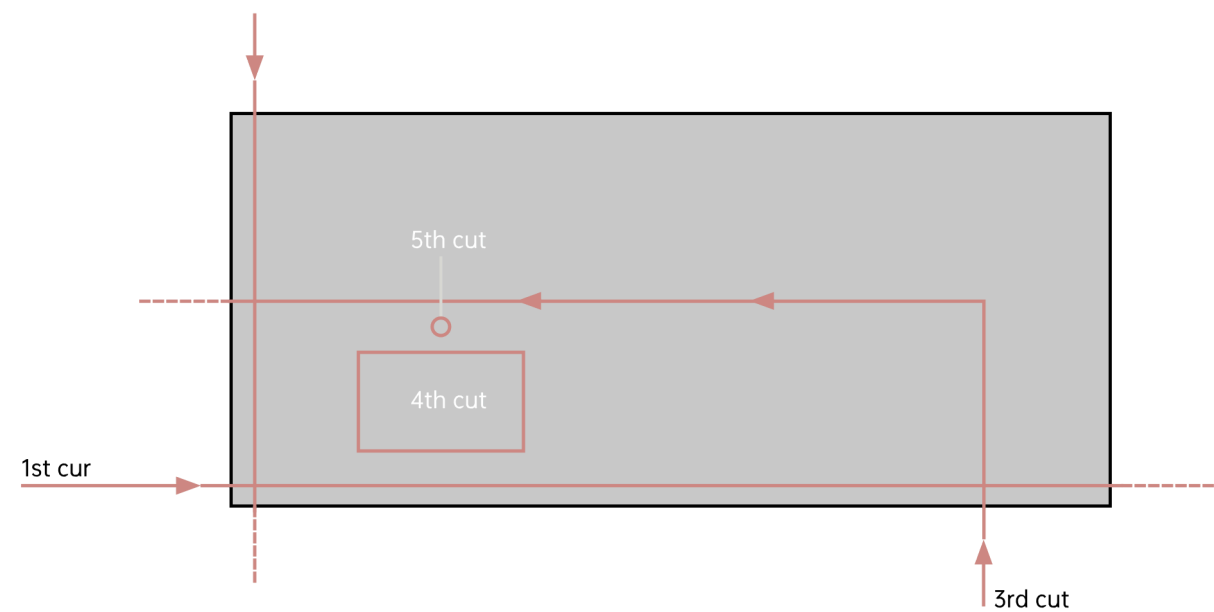
5.3 Water-jet Processing

MAMO slabs can be cut with water-jet machines. This method makes it possible to perform any type of cutting, shaping and drilling or making holes, with a high level of precision.

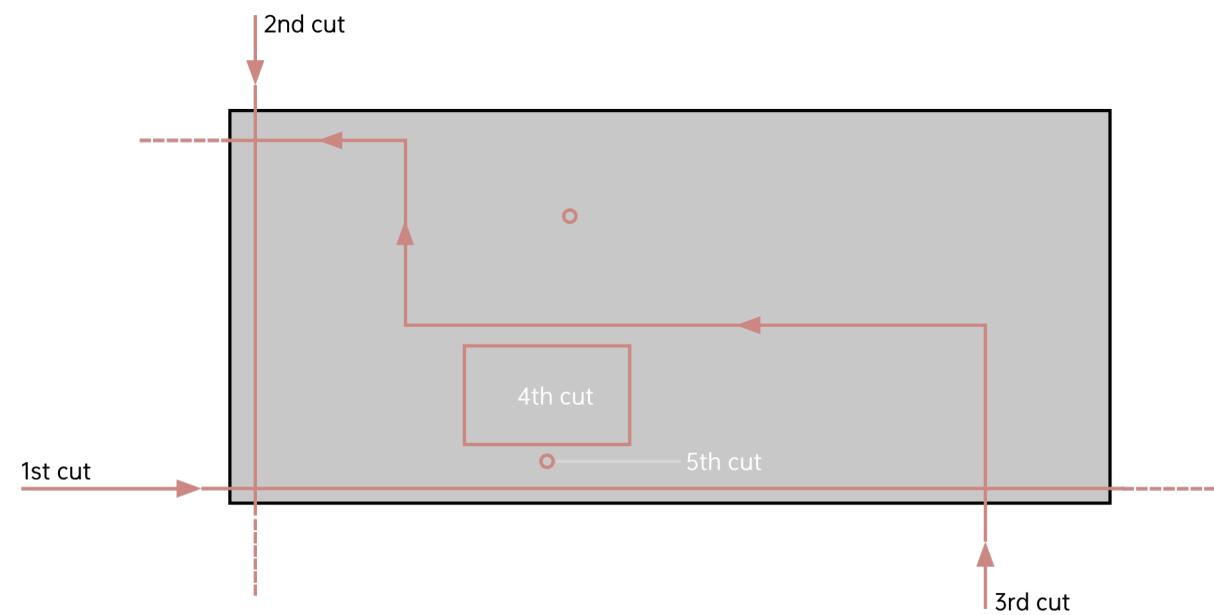
We advise making sure that the metal support grid is in good condition and planar, and that the piece is correctly blocked to prevent movements that could make it impossible to cut the slab.If the machine allows it, it is also possible to make 45 ° cuts. Adjust the processing parameters to obtain a straighter or rounder edge.Begin by cutting the larger cutouts and then do the smaller ones (for example, first cut the hole for the sink and then cut the hole for the tapware). We suggest starting and finishing the cut off the slab.

5.3.1 Cutting Scheme

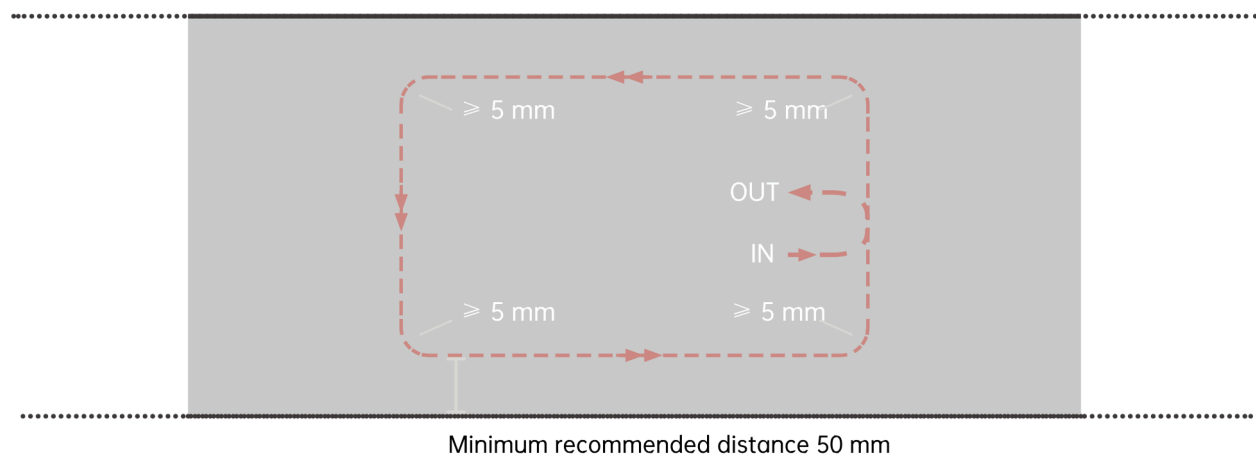
Here is an example of a cutting scheme that can be done with a water-jet process.



Here is an example of an “L” shaped cut that can be done with a water-jet process.



To make cutouts inside the slab, we advise starting the cut in a point that is inside the cutout area, and then gradually moving closer to the cut perimeter. Maintain the suggested minimum radius of 5 mm for internal corners.



5.3.2 Parameters

Water-jet	Pressure (bar)	Feed rate Mm / min	Cutting Abrasive	Initial Drilling Pressure	Drilling Abrasive
MAMO	380/413,5	1000/1200	Mesh 80 (350/500 g/Min.)	40/80	Mesh 80 (100/150 g/min.)
MAMO	380/413,5	600/800	Mesh 80 (350/500 g/Min.)	40/80	Mesh 80 (100/150 g/min.)

5.4 Numerical Control Processing

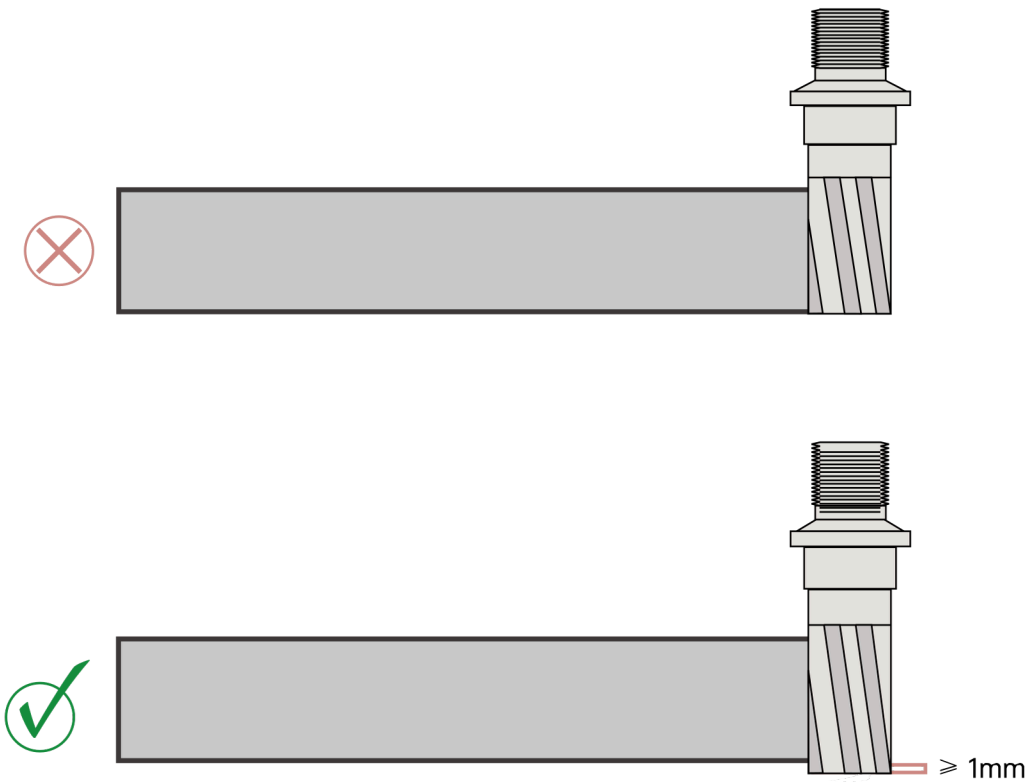
MAMO Sintered Stone can be cut with numerical control machines (CNC).

The most complex CNC machines offer the option of rotating and inclining the cutting head for many types of cuts.

Normally, CNC is used after shaping the top with a disk or water-jet cutter. This machine is used primarily to create cutouts for hobs and sinks, and to finish edges for flush tops, holes, edges and curved lines as well as wall scribing.

The tool must be diamond tipped and suitable for processing porcelain stoneware. The choice of tool depends on the specific process to complete.

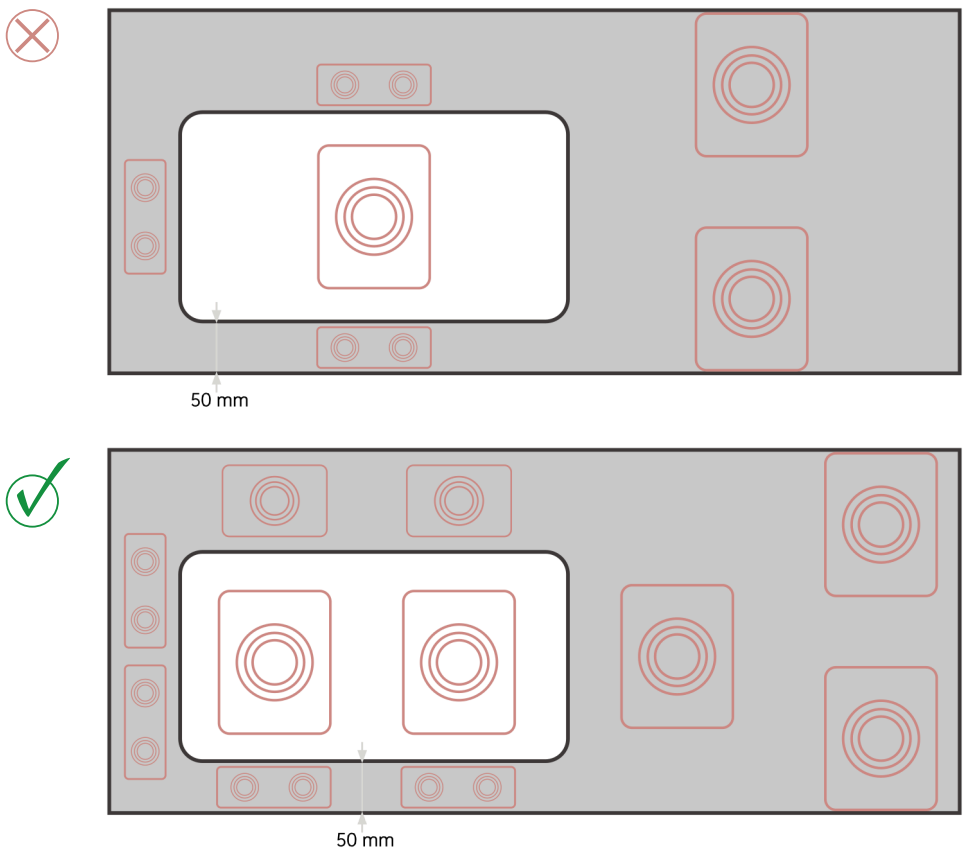
Do not make cuts or holes when the tool is oscillating. During the work, it is important to use plenty of water aimed in the right direction, both inside and outside the tool. The tool must be at least 1 mm wider than the thickness of the slab.



5.4.1 Positioning Suction Pads

Before beginning the process, check the correct hold of the suction pads on the back of the slab. If the hold is not satisfactory, use softer gaskets of the right thickness.

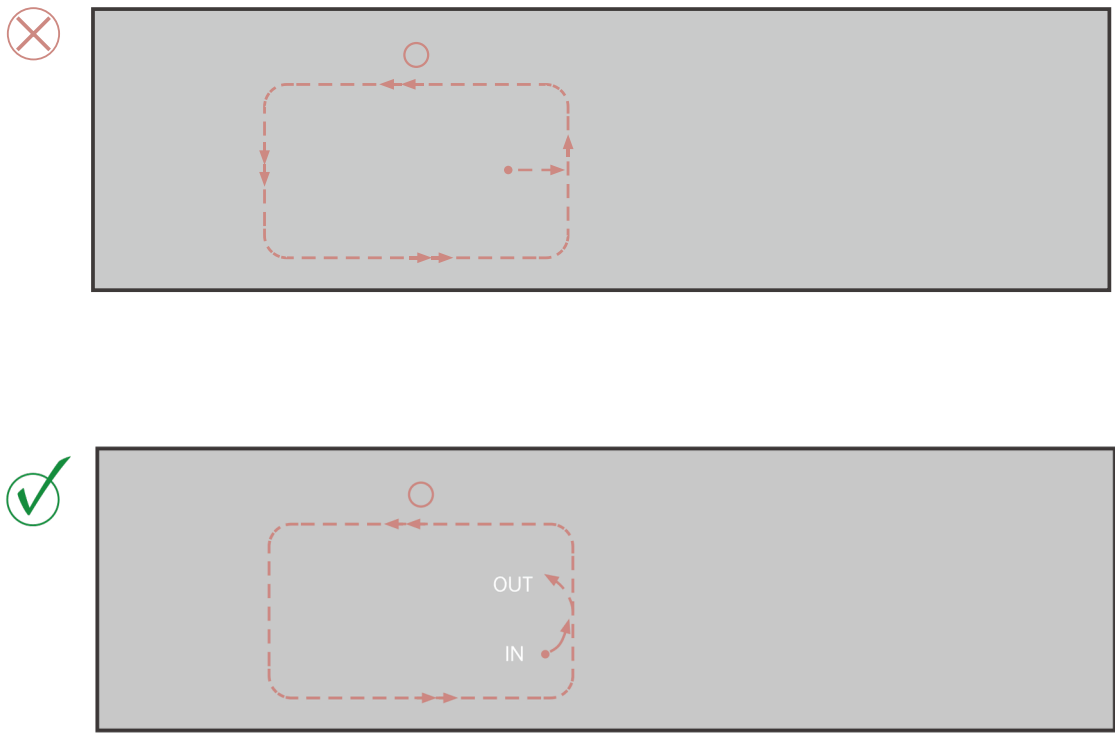
Correct positioning of the suction pads that hold the slab is a fundamental aspect of getting a good cut. For this reason, distribute the suction pads in a regular pattern to support the slab, including the part that must be removed. If you fail to do this, the part that is cut out could bend and cause crazing before the process is finished.



As an alternative to the suction pads, it is possible to use specific clamps: in this case, it is necessary to remember that the side with the clamp cannot be cut.

5.4.2 Flush Top Processing

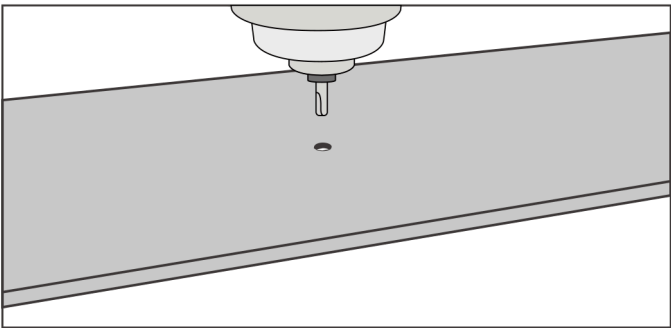
Perform the cuts as shown in the scheme below without entering the perimeter of the 90 ° hole, which would compromise the quality of the final process.



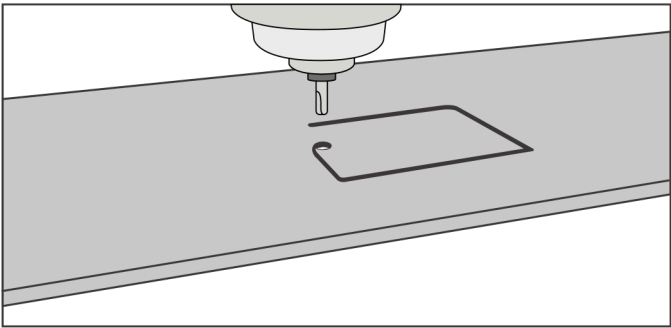
5.4.3 Flush Top Processing

We advise finishing the flush top before making the cutout.

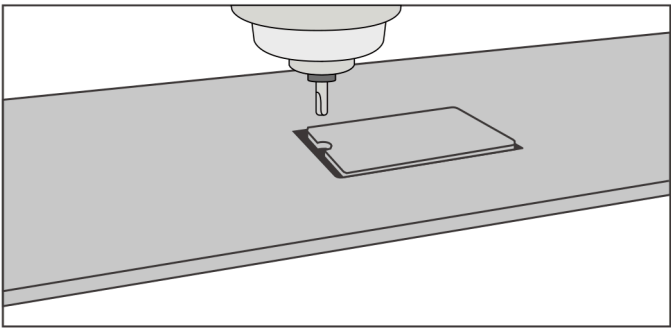
It is possible to cut a maximum recess of 4 mm in a MAMO 12+ slab and 8 mm in a MAMO 20+ slab, of a suitable size and depth according to the instructions on the technical sheet of the sink or appliance to install.



Drilling



Incremental cutting



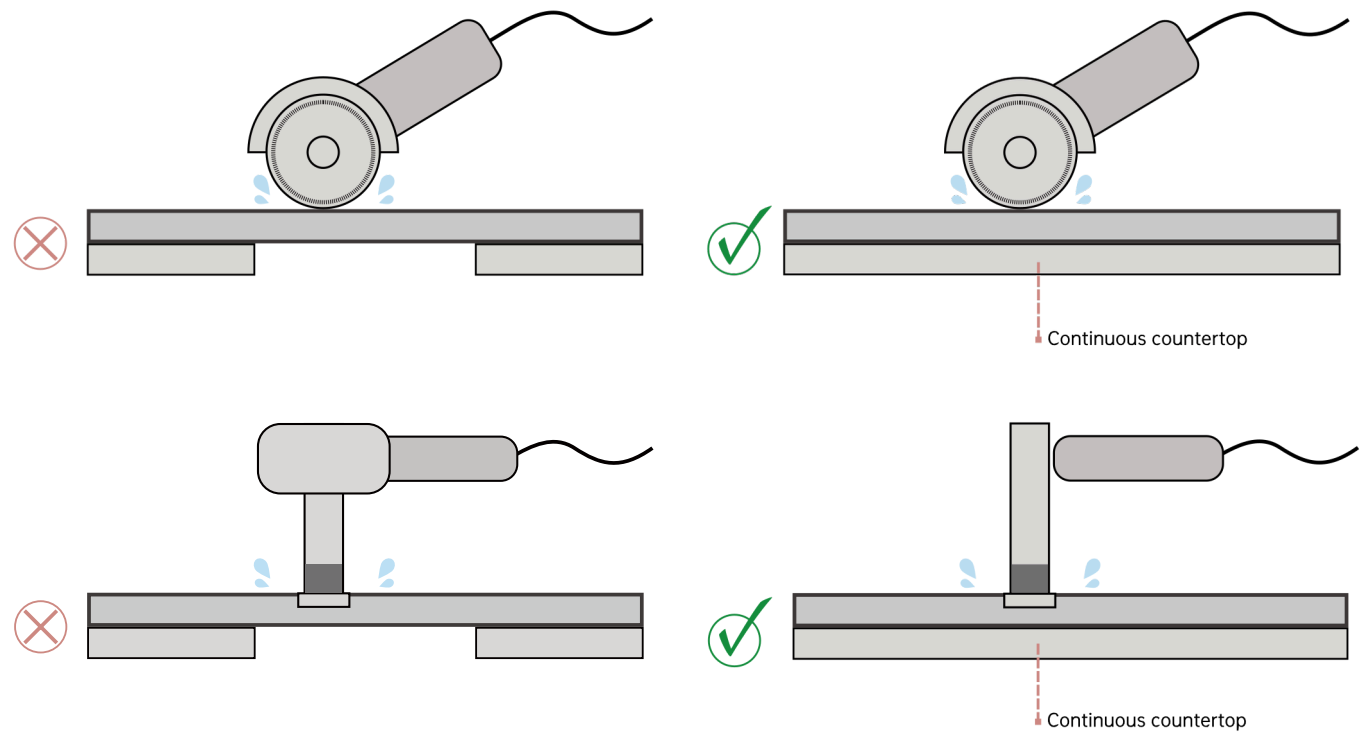
Cut

5.4.4 Cutting Parameters

CNC		RPM	Feed rate mm/min
MAMO 12+	Initial Hole	1800/3000	20/30
	Cutting Tool	3500/5500	200/300
	Flush Top	5000/8000	150/300
	Bevel	5000/6000	1500/2500
	Edge Polishing	3000/5000	1000/2500
MAMO 20+	Initial Hole	1800/3000	20/30
	Cutting Tool	3500/5500	150/200
	Flush Top	5000/8000	150/300
	Bevel	5000/6000	1000/1500
	Edge Polishing	3000/5000	1000/2500

5.5 Manual Processing

It is possible to use a manual cutting tool to perform cuts on MAMO 12+ and 20+ slabs. Through the use of accessories such as disks, diamond drill bits or abrasive pads with different grades, it is possible to obtain cuts, holes or finishes of edges or details of the countertop surfaces. It is important to position the slab being processed in a suitable position to avoid movements and vibrations. The area being processed should be bathed with water constantly or frequently, and the tool also, in order to guarantee correct cooling and the quality of the process.



5.6 Cleaning after processing

Cutting, drilling and similar operations generate dust residue due to abrasion of the material. This residue, along with the water required during the processing phases, tends to become solid on the surface when it dries.

It is, therefore, vital to ensure correct cleaning at the end of the processing phases because, if this is done wrongly or inaccurately, it could cause smears that are difficult to remove (particularly visible on dark colors). Clean off the processing residue from the surface of the slab with plenty of water, then dry with a paper towel and repeat the procedure until the surface is clean. Do not store any machine-processed material when wet. During assembly of the kitchen countertop, polyurethane or epoxy adhesives are used for panels, integrated sinks. etc.

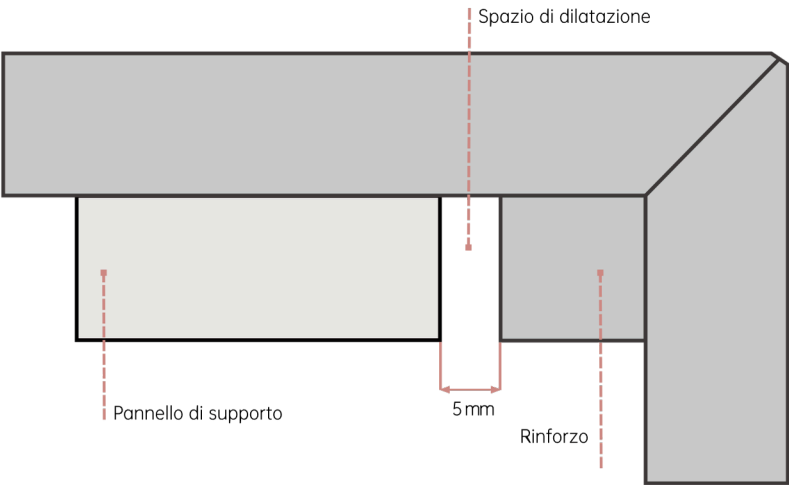
Epoxy products are designed not to be removable to ensure good performance over time. For this reason, they can stick to surfaces without being absorbed, but this makes them difficult or impossible to remove. It is, therefore, vital to remove them quickly by using soft sponges or cloths and cleaning products recommended by the suppliers.

Do not contaminate the rest of the surface with the cloths/sponges used to remove these materials. Do not move the finished surface with gloves that have adhesive products on them.

If any epoxy/polyurethane material is observed after installation of the countertop, they must be treated with basic products and soft sponges, but since they will have been completely hardened at that point, it might not always be possible to remove them.

5.7 Edges

We suggest reinforcing the joint by applying slats made from unused parts of the MAMO slabs, fixed with the same type of adhesive used to glue the 45° angle.



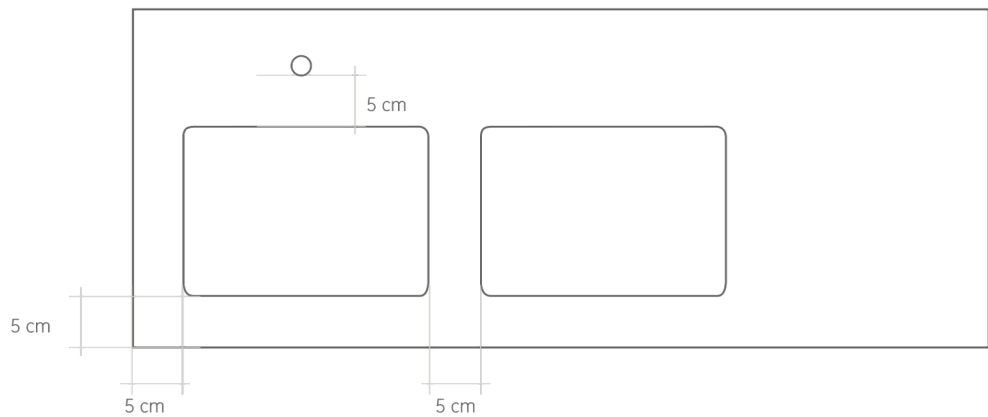
We suggest using two-component adhesives, generally epoxy based or equivalent, which can be purchased freely. These adhesives can be pre-colored or transparent, and specific-colored additives can be added.

We recommend proper and immediate cleaning of all glue and adhesives used, in compliance with instructions from their producers. Removal after the glue has hardened could prove to be impossible and would cause halos to form on the slab over time.

6.Installation of finished countertops

6.1 Cutout Design Guidelines

The minimum distance between a cutout and the edge of the slab must be at least 5 cm. MAMO recommends distances greater than 5 cm when the kitchen design allows as it makes the countertop stronger.



IMPORTANT

All cutout corners must have a minimum radius of 5 mm. Never leave 90° angles. We recommend radiuses of more than 5 mm when the kitchen design allows as it will make the countertop firmer.



Correct



Incorrect



The correct way to create a cutout, except with waterjet and CNC, is to first drill the corners and then the rest of the cuts.

Guidelines for cutouts:

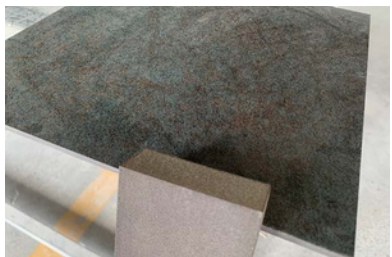
- Two straight cuts must never be joined.
- No squared inner corners.
- All inner corners must have a minimum radius of 5 mm.

The bottom and top edges of the cutouts are often a bit sharp or irregular; therefore BEVELLING them with diamond or abrasive sanders is recommended

Polishing the edges of the cutout is recommended to eliminate any micro-fissures created when cutting. The more intense this PROCESS is, the less risk there will be in the future.

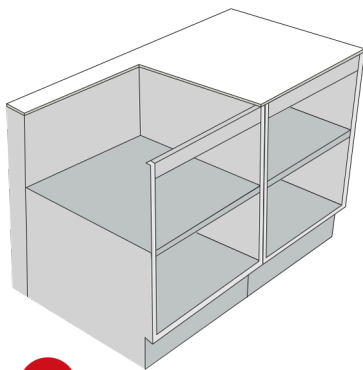


Incorrect

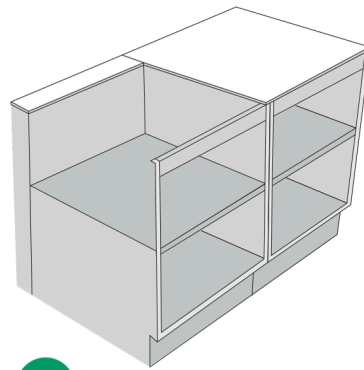


Correct

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

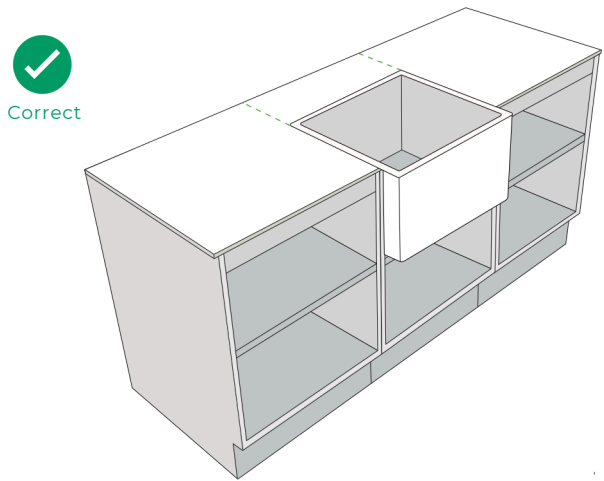


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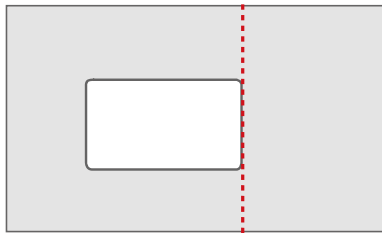
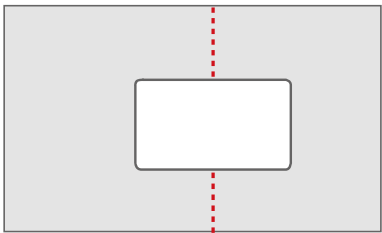


Correct

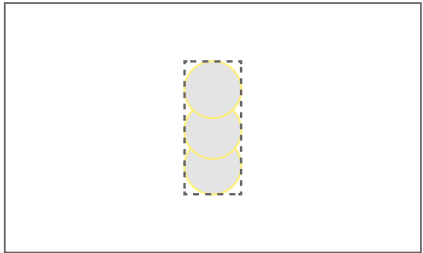
Irregular cuts are also not recommended such as for a “butler sink”; in these cases, add joints to the countertop design:



Other types of designs to be avoided:



Sockets and switches:
Gaps made to insert accessories (sockets, switches, etc.) should be done using circular drills; they may overlap.



6.2 Countertop Reinforcement

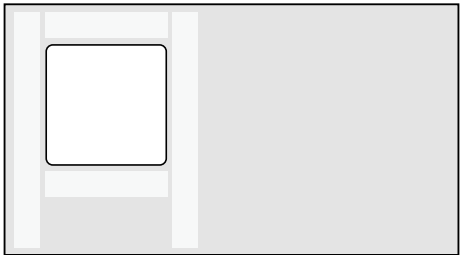
Countertops with 45° edges:

Countertops with 45° edges: Reinforcements for 45° edges must be made with MAMO strips; be careful when using other materials for reinforcement. The difference in the thermal expansion can cause the countertop to curve or the 45° edges may open over time. NEVER USE QUARTZ REINFORCEMENT



MAMO Sintered Stone is not an structural material. It is important to ensure the substructure is strong enough to withstand all possible loads and stresses. Additional reinforcements should be used at all times when cabinetry supports distance is greater than 60cm.

These reinforcements must be distributed under all mitred edges, sufficiently glued to both parts of it, and also assuring a full contact with the furniture. Please contact your glue supplier to choose a proper adhesive to ensure a strong bonding between the reinforcement and MAMO slabs.



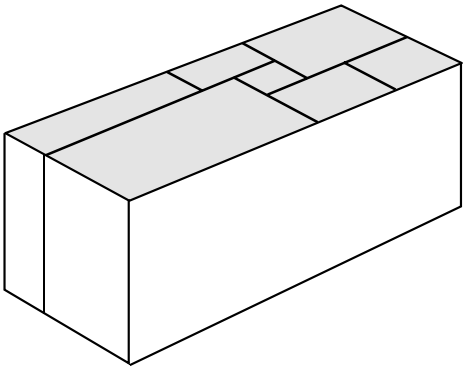
Moreover, it is important to reinforce the perimeter of the cutouts for greater strength and firmness in the area:



NEVER USE ENGINEERED QUARTZ AS REINFORCEMENT FOR MAMO COUNTERTOPS

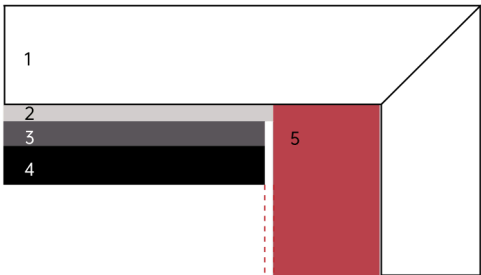
Countertops with a straight edge:

For straight edge countertops, it must be ensured a full support of the whole countertop, properly levelled and avoiding gaps between furniture and the countertop

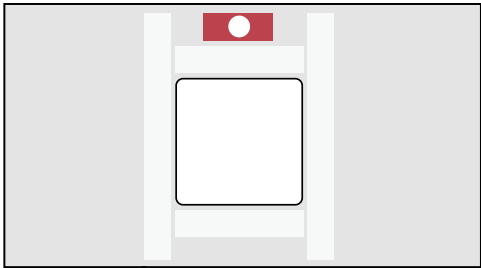


Countertops with 45° edges:

“The difference in the thermal expansion RATE can cause the countertop to BEND or the 45° JOINTS may open over time.”



- 1 MAMO
- 2 Adhesive
- 3 Cabinets
- 4 Brick / stone / concrete base
- 5 MAMO or dense granite reinforcement



6.3 Draining Racks

With a MAMO countertop, the only solution is creating sloped channels and combining them with an undermount sink.

The following considerations must be observed if drainer grooves are required:

- This part of the countertop will require additional cross-reinforcement with a solid top panel (18mm thick) or vertical rail (18mm x 45mm)
- The maximum depth of the channels is 3 mm for 12 mm thicknesses and 5 mm for 20 mm thicknesses.
- The minimum distance between channels should be 1 cm.

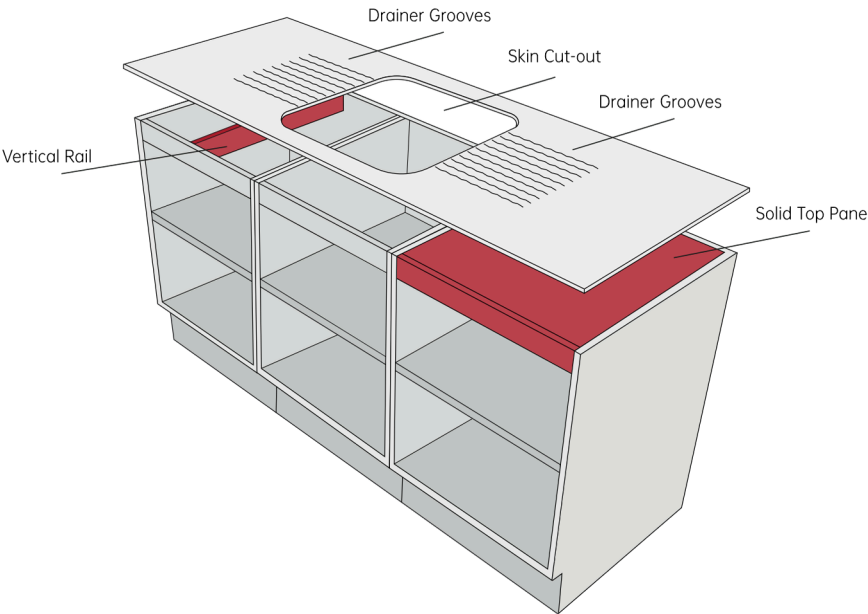
Manufacturing

Recess

Use a router bit and always begin at the sink gap. Never lower the router bit directly onto the surface. The first two times, eliminate only 0.5 mm; then a maximum of 2 mm per pass.

Finish

Sand the grooves by hand to remove any marks made by the router bit. Use fine sandpaper until all marks have been removed. Round the upper edges of the grooves and seal. In case a fully milled out draining board is required the entire area should be supported by a solid top panel. Please consider that with drainer grooves, the base color of the material will be visible. In some cases, this will contrast with the color of the surface.



6.4 Sinks

Flush sink

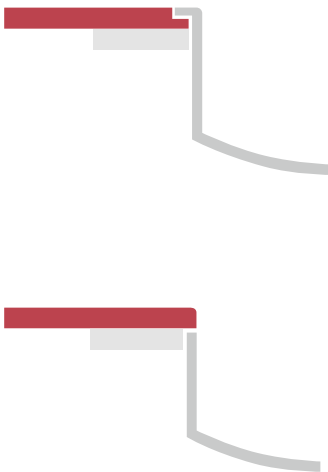
MAMO only recommends the installation of flush sinks in 12 mm and 20mm.

To perform the edge profile please check setcion no.5.3 CNC

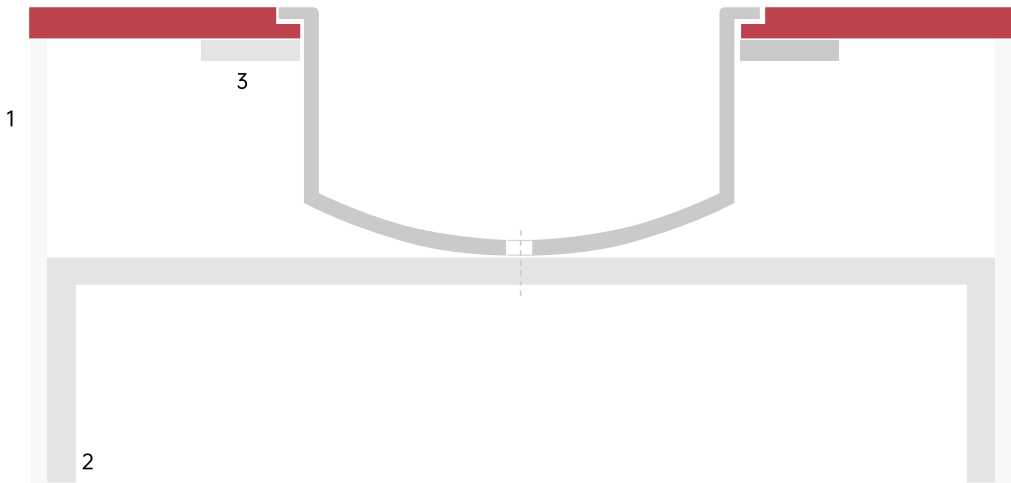
Removing more than 6 mm on a 12 mm slab or 10 mm on a 20 mm slab is not recommended.

Flush sink

To reduce the risk of splintering to a minimum, a round edge with a radius of at least 2 mm is recommended.recommended.



For large-size sinks, place a rod support structure under the sink so the weight is on the rods and not the countertop.



- 1. Furniture
- 2. Support rod
- 3. Reinforcement

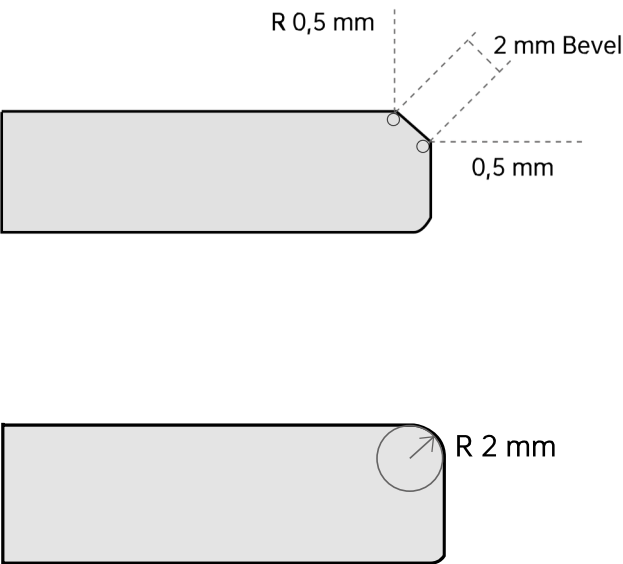
6.5 Edges And Joints

Edges

MAMO recommends the following minimum edge profile details to ensure increased edge performance.
It is the perfect compromise between esthetics and functionality.

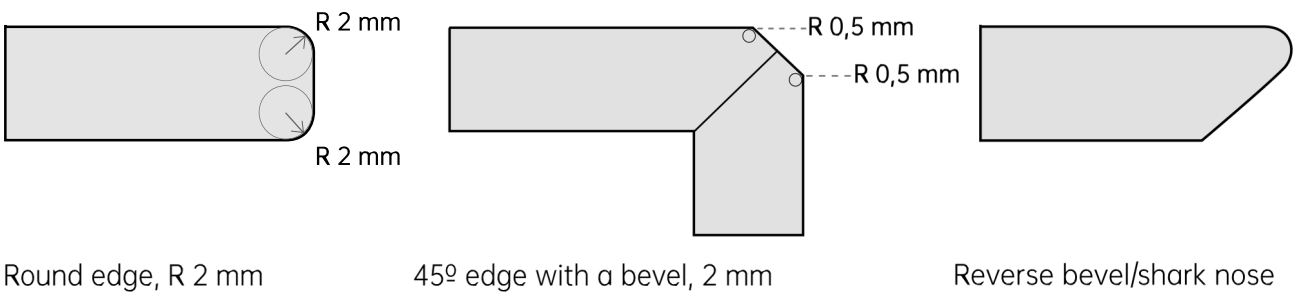
The edge is formed by a 2 mm bevel and by two rounded edges with a radius of 0.5 mm.
The radius is barely visible but increases the edge impact resistance.

In high impact risk areas (sinks and dishwashers, for example), the edges could be as follows:



The greater the radius, the better it will bear any impacts. Please consider that the greater the bevel, the more base color is exposed”
The edges can be wet or dry polished using standard granite or marble polishing tools

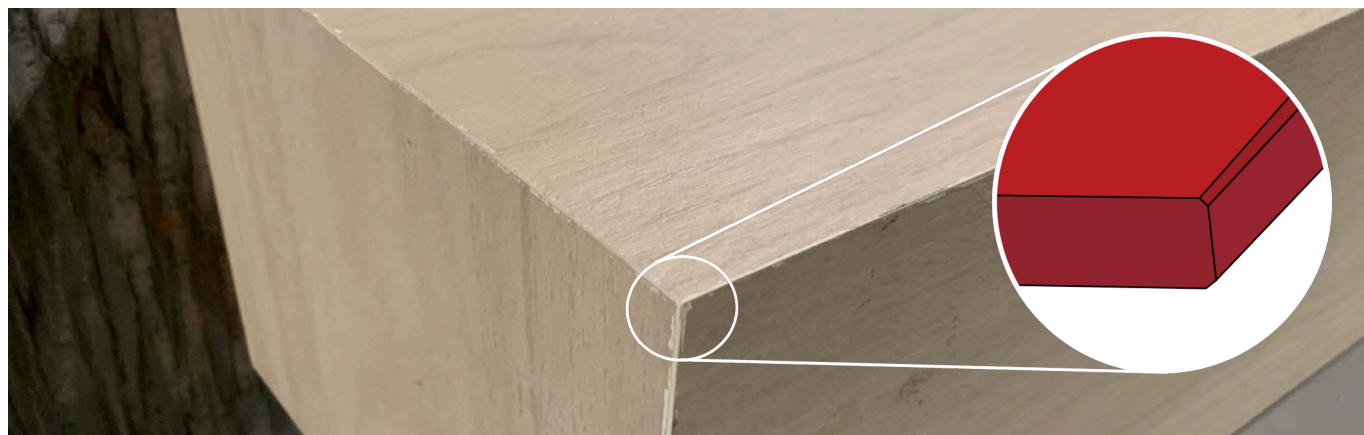
Recommended edges for MAMO:



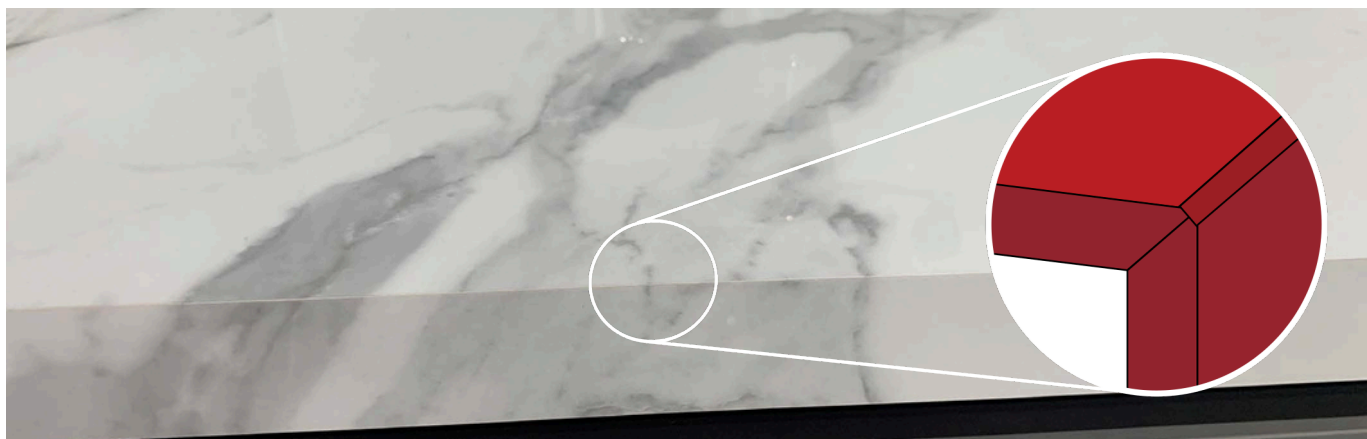
IMPORTANT

MAMO recommends treating polished edges with a water repellent sealant to further enhance edge performance.

45° edge with a bevel 12 or 20 mm



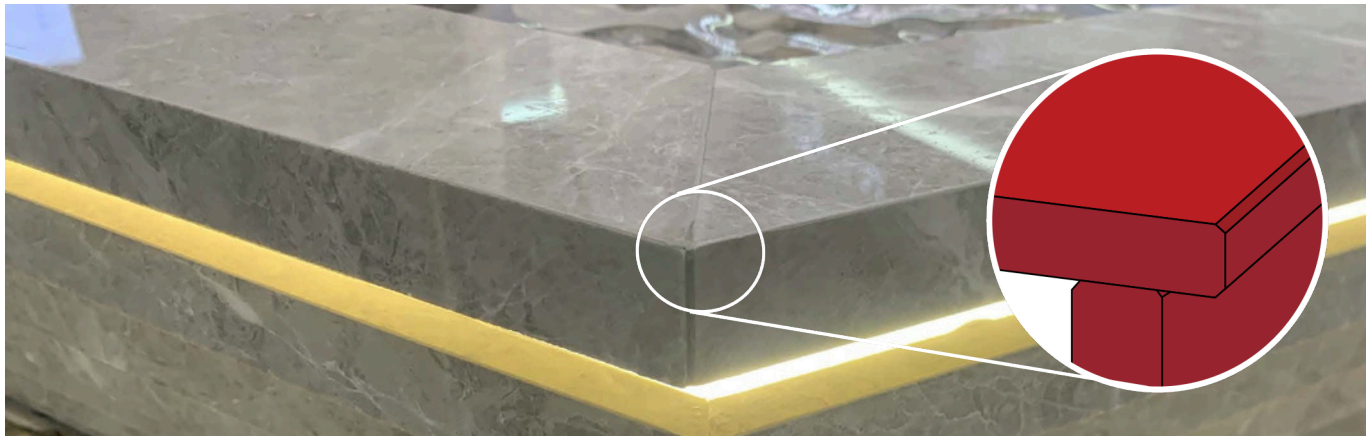
Straight mitred joint



Round polished edge



Overhang butt edge



Reverse bevel/shark nose



Butt edge

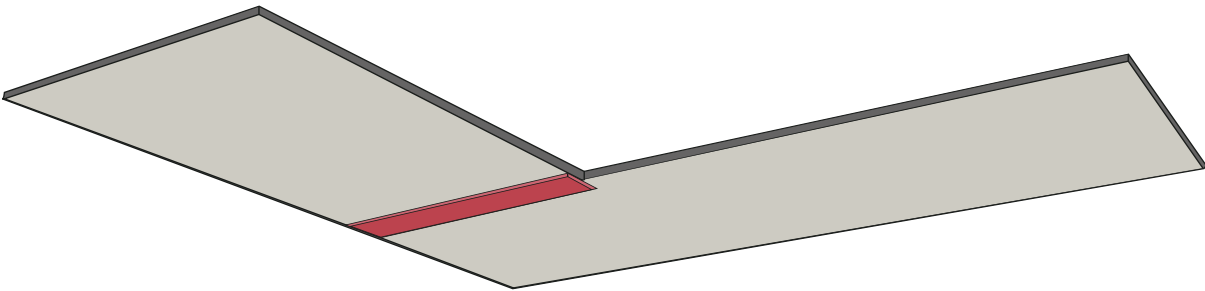


Given the texture of MAMO slabs, a micro-bevel for all joints is recommended. Even if the straight edges are perfect, they may be uneven due to the texture of MAMO slabs.



All joints must be sufficiently supported, either by an additional reinforcement underneath or support of the cabinetry. The support must run the full length of the joint.

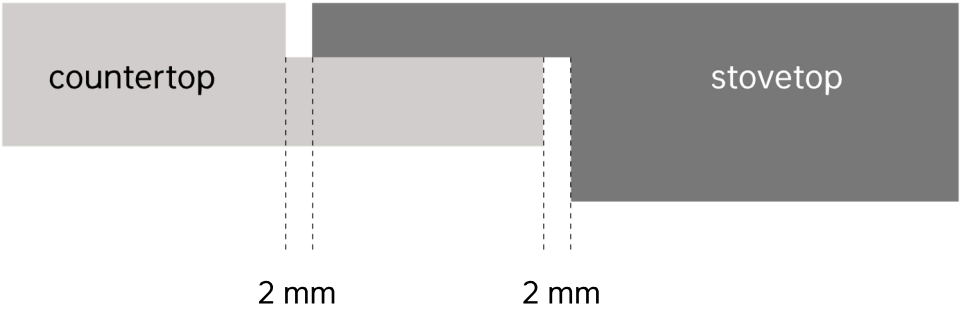
Please note that any alteration of the factory finished surface cannot be rectified.



Additional support using a strip of MAMO underneath the joint

6.6 GLASS-CERAMIC / INDUCTION STOVETOPS

The minimum distance between the countertop and a stovetop must be 2 mm.



Use the right heat-resistant silicone or the gasket(s) supplied by the stovetop manufacturer. Removing more than 6 mm on a 12 mm slab or 10 mm on a 20 mm slab is not recommended.

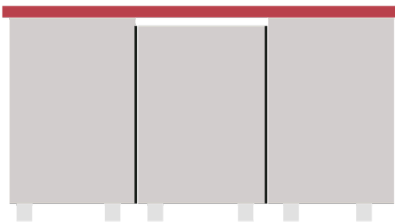
6.7 COUNTERTOP INSTALLATION

Furniture:

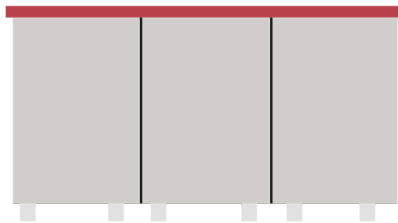
Furniture must be in perfect condition and level before installing the countertop. Cabinets must be secured to each other and then secured to the wall.



Incorrect

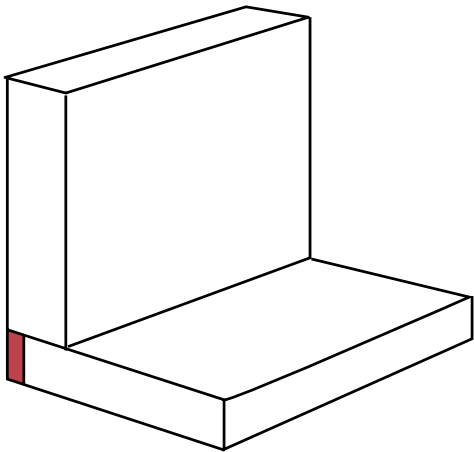


Correct



Expansion joints:

Given the irregularities found in walls and floors and possible structural movements in the building, leaving a 3 mm perimeter expansion gap between the countertop and walls is recommended.
To allow for expansion on vertical panels or waterfall legs, a 3mm space between the vertical panel/waterfall leg and floor is recommended.
All gaps/joints should be sealed with a flexible sealant.



Please check Adhesive (8) section of this manual

The use of rigid adhesives such as “Liquid Nails” and epoxies is not recommended.

6.8 Overhang

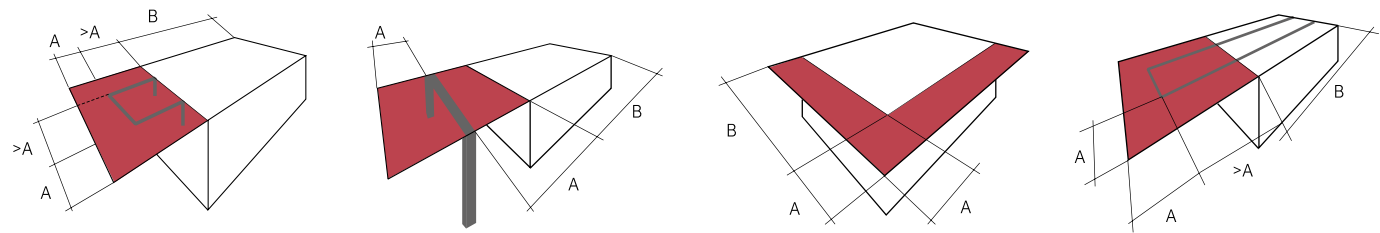
Please consider the below recommendations regarding maximum dimensions of unsupportedoverhangs when designing countertops.

For high use and higher load areas, please reduce the maximum allowed dimensions for unsupported overhangs.

	Thicknesses	
	12 mm	20 mm
1. Full side overhang		
A) Without cut-out		
B) With cut-out	A ≤ 350 mm	A ≤ 500 mm
	X ≥ 100 mm	X ≥ 100 mm
2. Partial overhang		
A) Without cut-out		
B) With cut-out	A ≤ 500 mm	A ≤ 1000 mm
	B ≤ 200 mm	B ≤ 400 mm
	X ≥ 100 mm	X ≥ 100mm

Please bear in mind that overhangs are not structural elements designed for high loads.

More examples of countertops with overhangs



6.9 Outdoor Countertops

MAMO recommends the use of exterior grade adhesives for outdoor applications/installations.

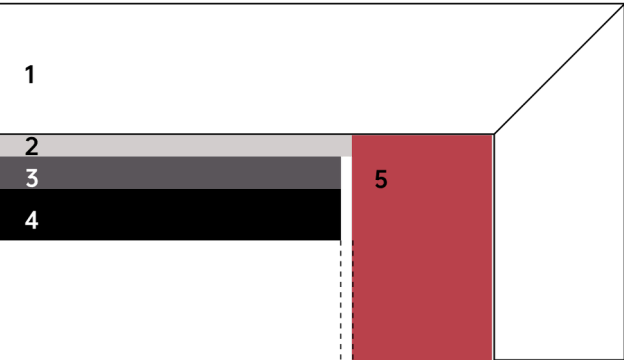
If there is no such substructure/support available, covering the top of the existing structure with reinforced cement panels is recommended.

When installing outside, avoid the use of wood or agglomerate planks due to their tendency to expand and contract as the weather changes.

Using flexible adhesives such as liquid nails, silicon or similar to secure an exterior MAMO countertop is not recommended.



To glue the 45° angles, it is recommended to use an adhesive that is suitable for outdoor use and resistant to UV rays



5 mm space minimum

- 1 MAMO Slab
- 2 Selected adhesive
- 3 Reinforced cement plank such as Kerdi-Board or similar.
- 4 Brick / stone / concrete base
- 5 MAMO or dense granite reinforcement

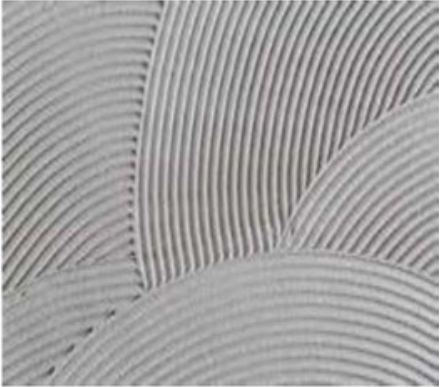
HOW TO APPLY ADHESIVE

It is recommended to follow these steps to guarantee a proper adhesion between MAMO slabs and support material.

1. Spread the adhesive over the substrate using a minimum 10mm toothed trowel.
2. The toothed trowel that will be used to extend the adhesive on the back of the slab must have smaller teeth (square teeth of at least 3-4mm), in order to achieve a 100% adhesive surface coverage. Spread the adhesive on the back of the MAMO panels using a minimum 6mm toothed trowel.



Correct



Incorrect

3. The adhesive must be applied in straight grooves, avoiding fan shapes, curved or similar patterns. The adhesive should be applied parallel to the shortest side of the slab to reduce the distance the air will travel to dissipate.

6.10 L-Shaped Countertops

L-shaped countertops

Dividing L-shaped countertops into several parts is recommended to avoid 90° corners in one part.



L-shaped countertops made of a single piece without a 45° angle must have a minimum radius of 20mm. An increase in the size of the corner radius will improve the performance of the countertop and reduce the risk of failure”



Make sure the furniture is in perfect condition and level before installing this type of countertop.

7.Wall Construction Process

7.1 Applicable to cement-based surface

1. Positioning snap line

Use ink lines to mark the position of each Sintered Stone on the wall.



2. Nailing at the grassroots level

Measure the drilling position of the burst screw/self tapping screw and use an impact drill to drill holes.



3. Install patches

Nail in screws and attach steel pendants, then tighten the screws for fixation;
A total of 6-8 steel pendants are fixed according to the size of the Sintered Stone, and the number of points to be punched is determined by the size of the Sintered Stone. The larger the board, the more points need to be punched



4. Polishing pendants

Polish the bonding position between the steel pendant and the brick back to make the contact surface rougher and have better bonding strength.



7.1 Applicable to cement-based surface

5. Gluing and bonding

Apply adhesive to the wall hanging parts and the back of the board before pasting and adjusting;

When pasting the table, it is necessary to use an infrared level to adjust the verticality and flatness in a timely manner.



6. Insert the precision work dense laying card

Install the subsequent tiles using the same steps, and insert a precision paving card at the tile joint for leveling.



7. Joint filling and cleaning

After the construction is completed, clean the surface of the Sintered Stone with a sponge. After 24 hours, clean the joints of the slab and fill them with sealant.



7.2 Wall Construction Process Precision dense seam spot pasting method

1. Grassroots testing

Use a hollowing hammer to tap the wall surface for inspection. If there is any hollowing, remove the cement at the hollowing position and refill it with cement residue or other protrusions on the base surface. Use a shovel to remove them. Use a spirit level and infrared instrument to check the vertical and flat surface of the wall surface for stains. Mark and level any non-conforming areas.



2. Grassroots leveling

- 1. Check if the wall is hollowed or cracked, and repair it first if there is any hollowing or cracking;
- 2. Determine the number and length of reinforcing bars based on the size of the area, and mark them properly;
- 3. Determine the thickness of leveling by using infrared light on the wall (fine leveling generally has a thickness of 5-10mm);
- 4. Mixing and leveling mortar or cement mortar;
- 5. Sprinkle water on the marked areas of the wall reinforcement bars;
- 6. Apply leveling mortar on top of the ruler, and make the reinforcing bars according to the pre marked positions;
- 7. Fill the gaps between the reinforcing bars, and then use a ruler to repeatedly push and pull to level them;
- 8. Simple light collection, no need for matte treatment. (The rough surface is more conducive to the laying of Sintered Stones)



3. Snap line division

According to the size of the Sintered Stone, use ink cartridges to mark the laying positions of each slab on the ground, facilitating the construction of reserved slots for the subsequent slurry layer; Calculate the quantity and processing method of ceramic tiles based on the pop-up line.



4. Check the alignment

After unpacking the rock panel packaging, use a 2-meter ruler to check the flatness of the rock panel; The detection standard is: the thickness of the Sintered Stone is 6mm or less, and the deviation between the center point and the corner of the slab is < ± 5mm; The deviation between the center point and the corner of a 9mm thick plate is < ± 3mm; 12mm thick < ± 1.5mm, products beyond this range may have a protrusion in the middle during construction (adding several pictures of measuring with feeler gauges); 5Co. nBduocat rtrdia l blaayicngk t ecslteinag nonin thge product to check for issues such as alignment and dimensional deviation.



5. Board back cleaning

Clean the aluminum powder on the back of the Sintered Stone with a cleaning steel brush to avoid affecting the bonding strength; The back and surrounding edges of the Sintered Stone should be cleaned of magnesium powder, floating dust, etc.



6. Roll brush back glue

Execution standard for roller brush adhesive:

- 1. The auxiliary material used for tiling is applied and brushed on the back of the ceramic tile, so it is also known as a two-component backing adhesive;
- 2. Cannot be used alone, needs to be used together with ceramic tile adhesive;
- 3. When used in combination with ceramic tile adhesive, the effect is better than simply using ceramic tile adhesive.
- 4. The two-component adhesive is divided into two groups: group A, powder, and group B, liquid. Group A and group B are stirred thoroughly with a mixer to achieve a particle free state. A roller brush is used to coat the back of the Sintered Stone (the magnesium powder on the back of the Sintered Stone needs to be clear and clean before use), and the entire surface can be coated. Wait for the surface to dry thoroughly. (Generally, at least 2 hours or more)



7.2 Precision sealing and thin pasting method

7. Sintered Stone trial laying

Mix the binder and water evenly in a 4:1 ratio using a mixer, paying attention to adding water first before adding the binder;

The best effect is achieved by stirring twice after 5 minutes of maturation.



8. Double sided adhesive scraping

Lift the Sintered Stone to the position where it needs to be laid and try laying two pieces. Check the thickness of the mortar to be scraped and the patterns to be laid, and double check if the laying drawings are correct.



9. Paving and leveling

Place the Sintered Stone on the inclined support frame;

Using a 6-8mm toothed cutter to scrape the short side horizontally on the back of the Sintered Stone, the glue on the back of the slab is scraped in two times. The first time is to smooth out the grid pattern on the back of the brick, and the second time is to scrape out the horizontal pattern;



Leave a 2cm blank space around the brick and do not scrape the mortar. The ground should be thinly scraped and then horizontally scraped according to the pre made frame method to obtain the thickness of the mortar layer.

10. Paving and leveling

After using electric suction cups or handling rods to transport the Sintered Stone to the installation area, press the Sintered Stone onto the ground;

After the bonding of the Sintered Stone is completed, use a large clapper/paver to compact the adhesive on the surface of the Sintered Stone, use an infrared positioning device to detect the overall flatness, and make further adjustments;



Pay attention to the treatment of the slurry layer. If the slurry is higher than the reserved layer, clean the slurry at the edge of the brick in a timely manner.

11. Insert the sealing seam card

When the first Sintered Stone is laid, insert a precision laying card and fix the width of the brick joints with a spacing of 10-20cm (this spacing can only be reduced and cannot be expanded).



12. Clean and fill the gaps

Use a sponge or cleaning towel to wipe the surface of the Sintered Stone, use a plastic scraper to press the material into the gaps of the Sintered Stone, fill the gaps to the surface of the overflowing brick joints, and then use a joint filling pressure plate (pink plastic pressure plate provided in the packaging) to press the overflowing slurry until it separates from the brick joint slurry. After 4 hours, remove the slurry separated from the brick joint and carefully inspect the surface of the ceramic tile for any residual slurry, If necessary, clean it promptly before the slurry is fully cured. If there are any defects, please repair them in a timely manner. Normally, it takes one week for the seam to be beautiful, with a minimum of 7 days. The best filling cycle is 28 days after the laying is completed.



Installation tools

Stirring drill

Testing tools	Test Rod	/
	Spirit level	/
	filler gauge	/
	laser level and measure	/
Installation tools	Stirring drill	Flat bottom
	Putty Knife	Cleaning steel brushes
	10m toothed cutter	Metal hanging piece
	Plastering knife	2-meter guiding ruler
	Test Rod	Angle grinder
	Concrete spreader	Leveling insert
	Slotting machine	Fine dense paving card
Laying auxiliary materials	Special tile adhesive for Sintered Stones	/
	Ultra dense beautiful porcelain	/

SINTERED STONE

Use and Maintenance Standards

The board is very easy to clean and does not require special maintenance work. The production process (involving very high-quality raw materials and high firing temperature) makes the surface of Nabel Sintered Stone non absorbent and almost completely pore free, which means that the cleaning operation is simple and efficient.

In fact, ceramic structures do not allow dirt to penetrate into the interior of the plate.

1. Cleaning after installation

After processing and bonding the materials, clean the ceramic surface to remove any possible contaminants (copper green, filler or adhesive residue, etc.). It is crucial to perform this step correctly, as improper operation may cause halos.

To clean the surface of the structure, we recommend using a large amount of water and liquid vacuum cleaners to quickly remove stains and remove any dirt that may deposit on the surface structure. It is important to complete the cleaning phase before the adhesive completely hardens, as given the surface structure, it will be more difficult to remove the adhesive after it has completely hardened.

For proper cleaning, please always follow the specific instructions provided by the manufacturer of cement and epoxy resin fillers and adhesives used for installing floor slabs to understand the products to be used, as well as the methods and waiting times. If installing floor slabs outdoors, we recommend cleaning them immediately after installation at the coolest time of the day. Do not use abrasive substances or equipment. Under no circumstances should hydrofluoric acid or products containing it be used.

The instructions listed in this paragraph do not apply to the Filo series and all Lucidato finishes. Any residue of materials used during installation that cannot be removed after drying cannot be considered a material defect. During installation and cleaning, regularly clean glossy finished products to avoid surface scratches.

It is necessary to use a slightly worn scratch resistant sponge and a large amount of water to eliminate residues of filler or epoxy resin adhesive after laying the board and before drying the product. It is crucial to use water-based products that are always clean and frequently replaced. Cleaning agents can be used for deep cleaning the filler manufacturer suggests that attention be paid to eliminating all halos. To improve efficiency, we recommend wiping the floor dry with absorbent paper to collect all resin residues and prevent them from depositing on the surface and producing opaque halos after water evaporation.

2. Regular cleaning

Before use, it is recommended to clean the entire surface with acidic products to remove halos and residue from the construction site. Thoroughly rinse with water to avoid copper rust on the surface. For polished slabs, it is necessary to remove protective wax based components used for packaging between the slabs. These elements can be removed with a wooden shovel or industrial alcohol.

For the daily cleaning of MAMO Sintered Stone a soft cloth, warm water, and commercially available ceramic surface cleaning agents can be used. These must be diluted/rinsed according to the instructions of the detergent to avoid surface copper rust that may retain dirt.

Light or dark background finishes may require more frequent daily maintenance, especially if they are structured, heavily trafficked, or have direct external channels, as they often make dirt more noticeable. According to the type of structure, it is necessary to use a cloth and apply sufficient pressure to maintain surface cleanliness.

Please note that early cleaning can make it easier to remove stains. If left on the surface for a long time, some residues may require the use of specific cleaning products. Under no circumstances should hydrofluoric acid or products containing it be used.

