

# DELLA TERRA® QUARTZ

by

## ARIZONA TILE

[www.arizonatile.com](http://www.arizonatile.com)

DELLA TERRA® QUARTZ FABRICATION MANUAL

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## PRODUCT DESCRIPTION

Della Terra® Quartz, a natural quartz surface, is a blend of nature and technology, combining beauty and functionality in a high performance surface. Della Terra Quartz is approximately 90% quartz, one of the hardest minerals in nature. Color controlled quartz is blended together with technologically advanced polymers. Because of its high quartz content, Della Terra Quartz surfaces are ultra-durable and resistant to scratches and chipping. Its dense composition also makes Della Terra Quartz highly resistant to staining. During fabrication, it is recommended to use denatured alcohol rather than acetone to clean quartz slabs. However, if acetone is used, it should first be applied with a rag, wiping on and off immediately.

For more information, including recycled content and certifications, please refer to [www.arizonatile.com](http://www.arizonatile.com).

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# SLAB INSPECTION

## INITIAL INSPECTION

Prior to fabrication, a careful inspection of the slabs is required. Carefully check the slab surface which, depending on the finishing process, must have a smooth appearance and meet the following criteria:

- No presence of foreign materials.
- No residue of color or mixture of the material produced previously bigger than 3/16".
- No holes or scratches.
- No pigment stains larger than 3/16" (only for monochrome materials).
- No dull areas (on polished surfaces).

Despite the strict procedures in place to ensure consistent appearance over time, slight variations in color and structure are possible due to the complex manufacturing system and the quartz used, which being a natural raw material, even if carefully selected from time to time can show slight variations in color and transparency.

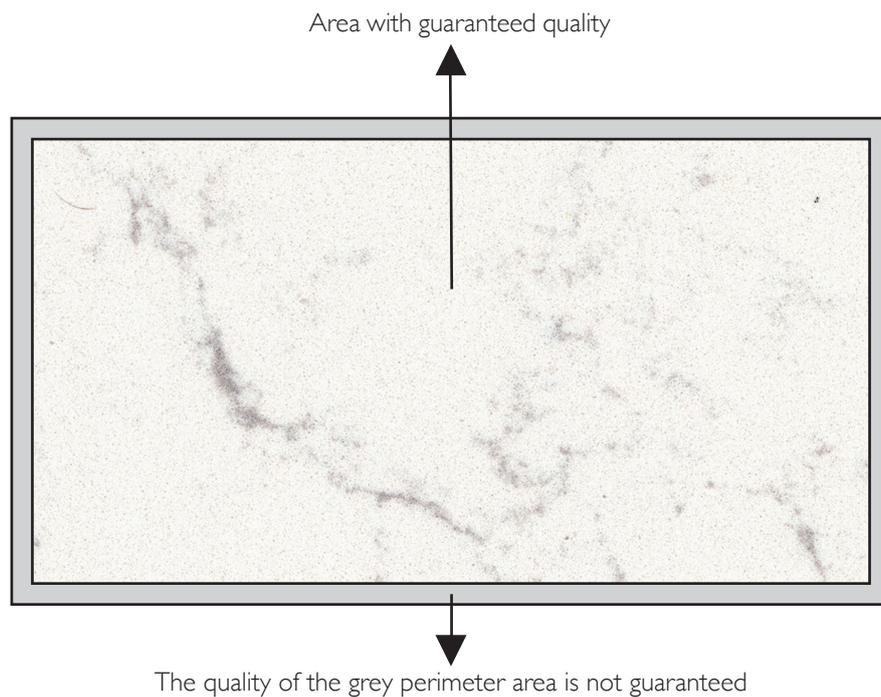
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In addition to a visual inspection, verify compliance with the dimensional tolerances:

- Thickness tolerance ( $-1/16'' / +1/64''$ ).
- Flatness tolerance ( $5/32''$  in length /  $5/64''$  in width).

**NOTE:** The flatness must be measured at the center of the slab itself while in a horizontal position, taking into consideration the entire length and width of the slab (not the diagonals).

The back of the slab must have a smooth finish. Surface roughness must not exceed  $1/64''$ . Small cracks are allowed in the peripheral area up to  $1-1/2''$  from the edges.



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**NOTE :** If the fabricator believes the slab is unsuitable it must be replaced before starting work. Arizona Tile will not accept claims for slabs which have been cut or modified from their original condition.

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# FABRICATION EQUIPMENT

## PERSONAL PROTECTIVE EQUIPMENT

- Safety gloves
- Safety goggles
- Dust mask type FFP3
- Steel toe safety shoes
- Hearing protection
- Work clothing

## FABRICATION TOOLS

The equipment required for fabrication is the classic type used for fabricating natural stone, with tools designed specifically for quartz. Below is a list of the equipment commonly used for fabricating:

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- Bridge saw
- CNC contouring machine
- Waterjet cutter
- Edge polisher
- Diamond cutting blades
- Diamond grinding wheels
- Diamond burs
- Forklifts for handling
- A frames or pin racks to store slabs
- Overhead cranes
- Jib cranes
- Air compressor
- Clamps
- Dust extraction system
- Water treatment system
- Diamond polishing disks
- Work tables

# FABRICATION TIPS

## CUTTING THE SLAB

The information provided in this chapter is general and not specific. For detailed information on the type of tools and the speed rate of the blade (RPM), please contact the suppliers of the equipment or tools directly.

The quartz slabs must be cut with bridge saws, CNC machines or waterjet equipment with tools specially designed for quartz.

Cutting is an important fabrication phase and is affected by several variables:

- The speed rate of the blade
- The revolutions per minute of the blade (RPM)
- The type of blade
- The wear conditions of the blade
- The conditions of the cutter surface
- The shape of the piece to be obtained
- The flow of cooling water
- The cutting surface temperature
- The conditions of the saw head

Each of these variables and their combination affect the result of the cut slab. Therefore when making a top, proper design and fabrication will prevent problems from occurring during production and after installation.

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The travel speed of the blade and the rpm depends on several variables, such as the type of cutter; the type of blade, the metal binder and the grain of the diamond, the wear of the disk, etc. We therefore recommend to always consult the manufacturers or suppliers of tools and cutters for the correct setting of this data.

The table below shows indicative values commonly used for cutting:

<b>THICKNESS OF THE SLAB</b>	<b>NOTES</b>	<b>FEED SPEED</b>	<b>DIAMETER OF THE DISK</b>	<b>RPM</b>
1/2"	Full cut	78-3/4"/min	12" 14" 16" 20"	1850-1950 1600-1700 1400-1500 1100-1200
3/4"	Full cut or in steps of 3/16" - 3/8"	118"/min	12" 14" 16" 20"	1850-1950 1600-1700 1400-1500 1100-1200
1-1/4"	Full cut or in steps of 3/16" - 3/8"	118"/min	12" 14" 16" 20"	1850-1950 1600-1700 1400-1500 1100-1200

# FABRICATION TIPS

## GENERAL INSTRUCTIONS FOR CUTTING

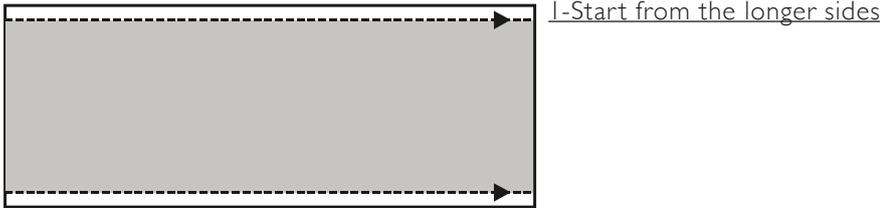
- Ensure that the work surface is in good condition so that the slab is not able to move during cutting.
- Use blades and tools specifically designed for quartz.
- Check the wear condition of the tools and replace them if damaged or worn.
- Keep an abundant and constant flow of cooling water in the working area of the blade.
- First, make the cuts for the trimming on the two long sides of the slab.
- It is not recommended to plunge the blade into the slab to make the cut. If it is necessary however, sink the blade very slowly.
- The holes for the sink/cook top should be made after all other cutting operations are complete.
- If you do not have a water jet to make the holes for sinks/cook top cut outs and internal angles, then first drill at the corners and then make the cuts.
- Do not change the original surface finish of the slabs.
- Use the cutting parameters recommended by the manufacturers of the cutting tools.

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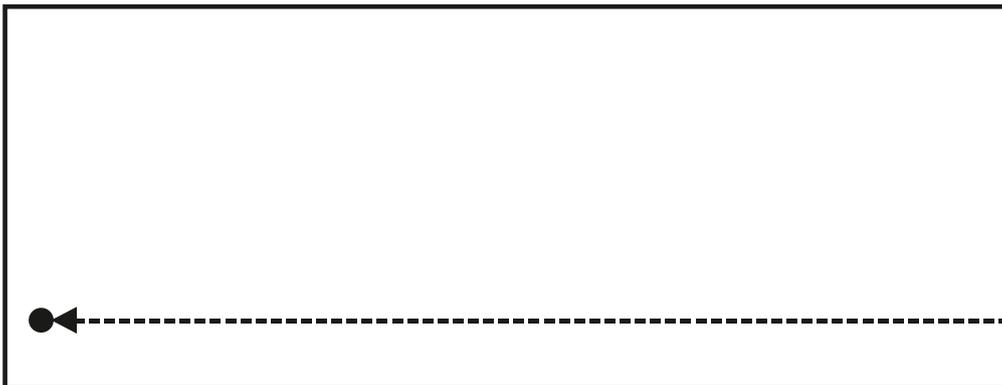
**NOTE:** Water that is left to dry on the surface of quartz can leave a calcium stain that is hard to remove and may be highly visible on darker colors. It is recommended to remove excess water before allowing to dry on the surface.

## TIPS TO AVOID BREAKAGE

- Trim the edges of the slab by 5/8" or more, starting from the longer sides.

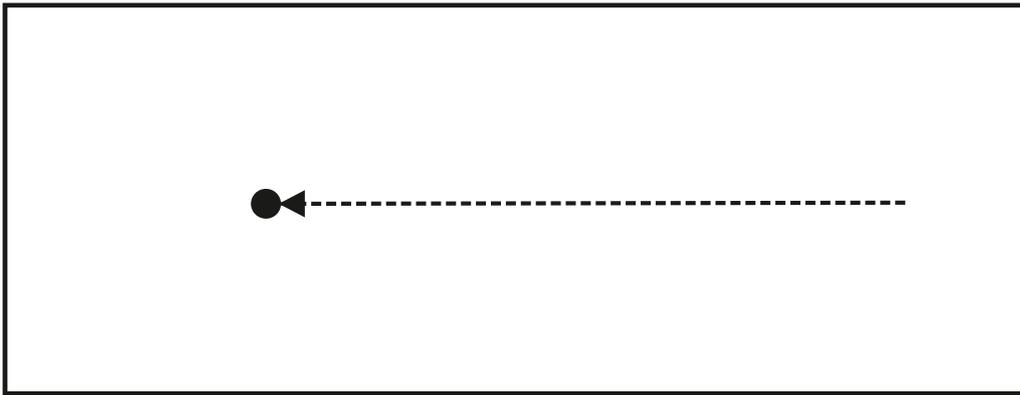


- When cutting, if you note that the cut starts to close, before finishing it, insert a small wedge to keep it open.
- To cut the entire length of the slab, drill a hole (1/2" to 1-1/4" hole) near the end of the cut and cut advancing towards the hole.

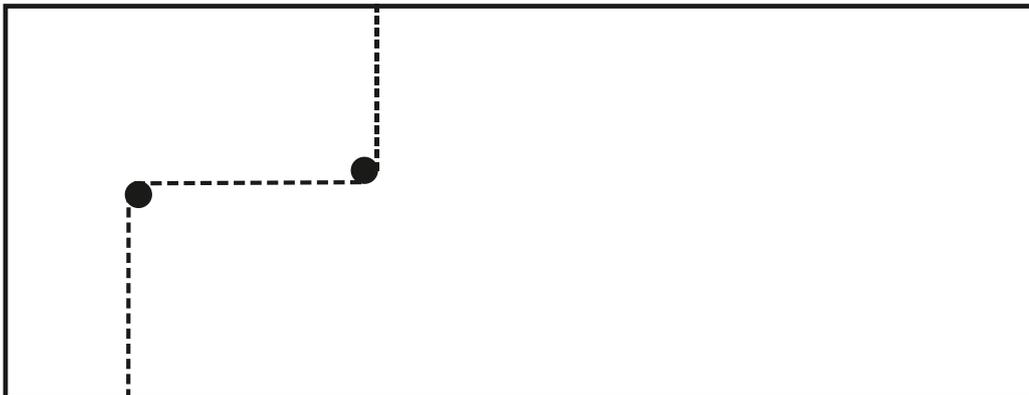


## FABRICATION TIPS

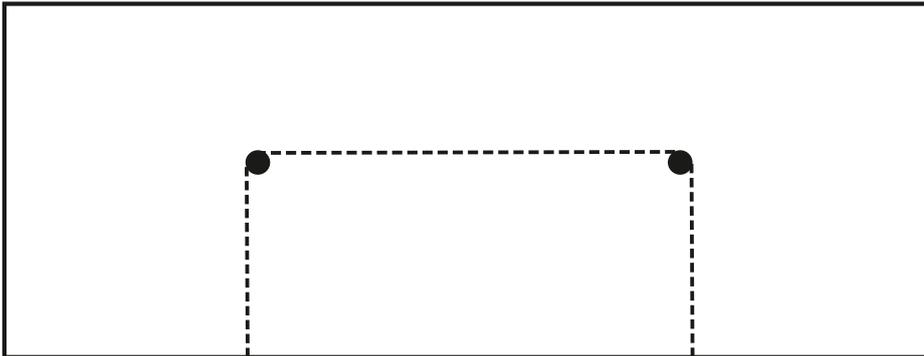
- If L-shaped pieces must be made, the inside corner radii should be drilled first (1/2" to 1-1/4" hole) and saw-cut into drilled hole, allowing for the required 1/4" to 5/8" radius.



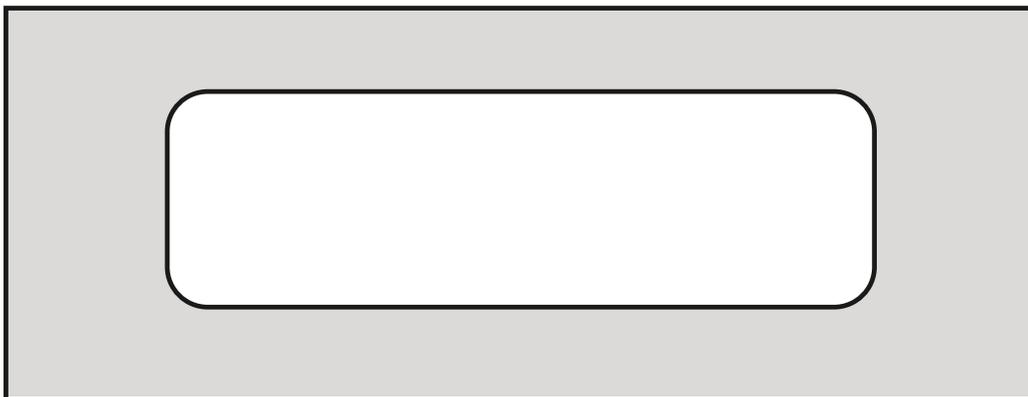
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- To make U-shaped pieces, before cutting, make the holes (1/2" to 1-1/4" hole) where the cut lines intersect, always making the shorter cut first.

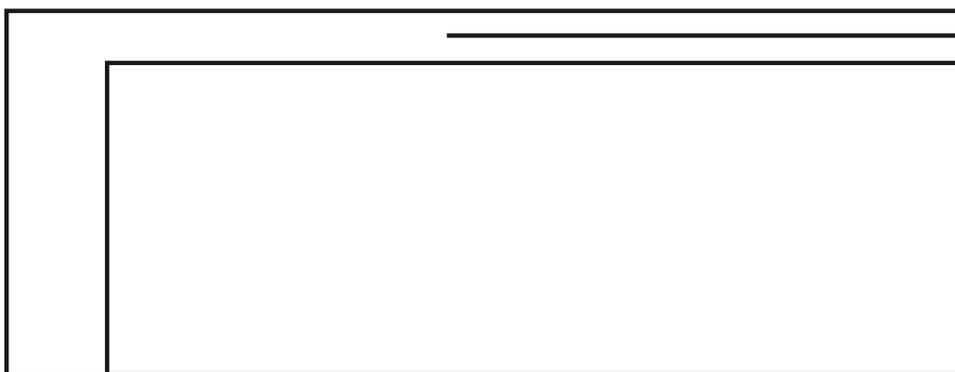


- All the inside corners should be rounded, with a minimum radius of 1/4" for sink openings and 1/4" in all other cases, although 1/2" is recommended when possible. By eliminating the corners, you remove the weak points most susceptible to breakage.



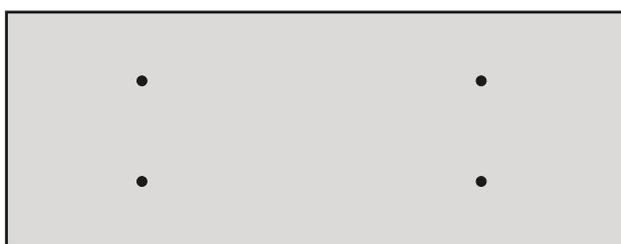
## FABRICATION TIPS

- On Victoria and Alberta slabs, you can make a cut along the longer side of the slab, at approximately 1-1/4"-2" from the edge and down about 20"-24". Then make the actual cut, parallel to the first cut and at about 1-1/4" to 2" from this.



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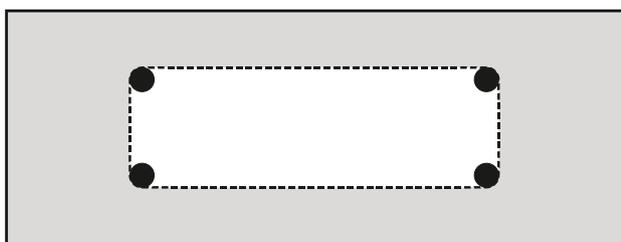
- If the opening for sinks or cooktop cut outs is made with a CNC machine and finger tool bits or with a Waterjet, the 4 corners should have a minimum radius of 1/4" (the largest possible). If the opening is made with a bridge saw, drill a hole (1/2" to 1-1/4" hole) at the four vertices, then make the cuts to join the holes in order to leave the edges rounded. This prevents breakages even after installation, therefore it should always be done.



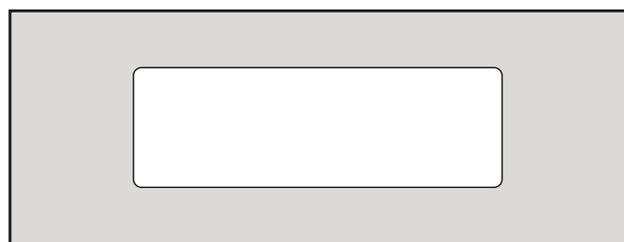
1-Mark the vertices



2-Drill little holes corresponding to the vertices



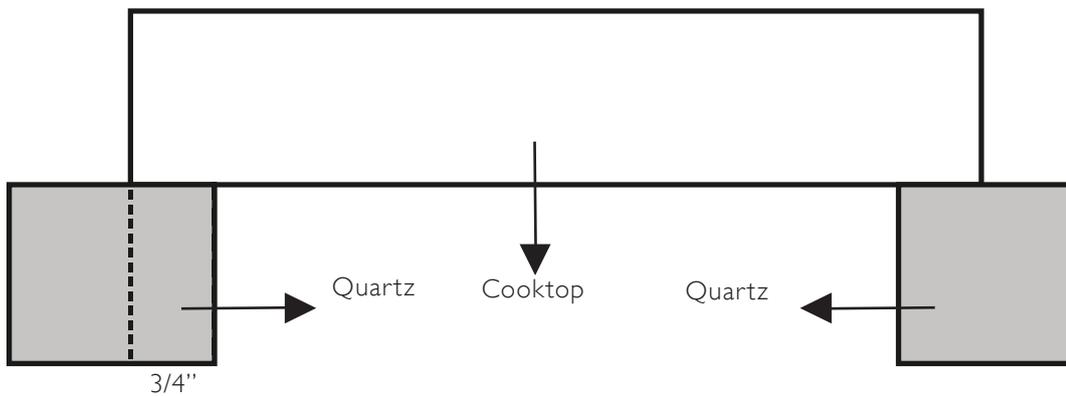
3- Make the cuts to join the holes



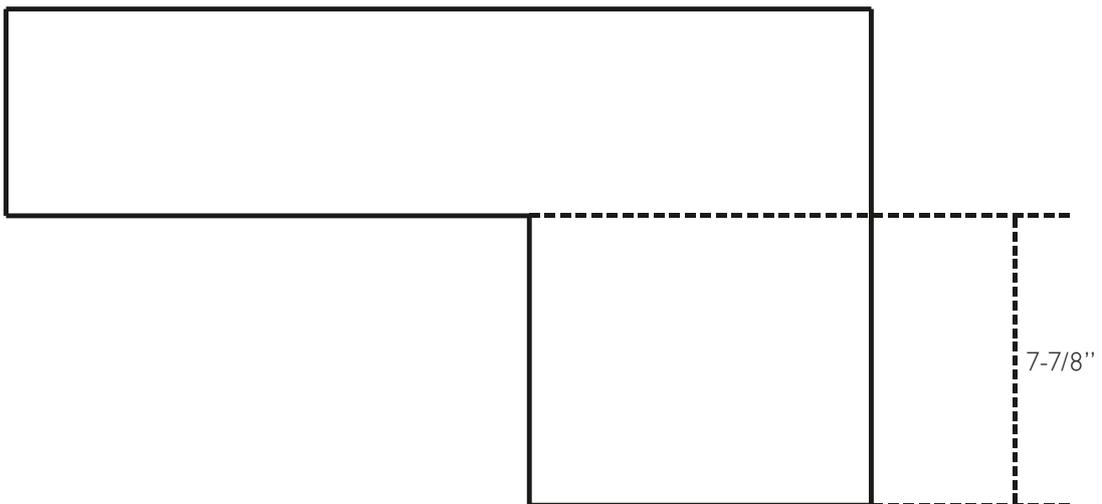
4-Hole with rounded edges

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- The opening for installing cooktop cut outs must be sized for the cooktop to rest no more than 3/4" on the perimeter of the opening made. This is to avoid possible breakages caused by the section of the slab that is left below the cooktop. Additionally, there should be at least 1/8" gap between the cut out opening and the cooktop chassis on all sides.



- If an L-shaped top must be made without a corner seam, a 1/4" minimum radius is required, however a 1/2" radius is highly recommended.



# FABRICATION TIPS

## GENERAL INSTRUCTIONS FOR CUTTING WITH CNC

- If cutting with CNC with a diamond blade, refer to chapter “General Instructions for Cutting”.
- If cutting with a diamond cutter (finger bit), use cutters specifically for quartz. The finger bits compared to diamond blades remove a substantial amount of material during fabrication and therefore require a reduced feed rate, usually between 7-7/8”/min and 15-3/4”/min and 4000-8000 rpm.
- Fabrication must be carried out in compliance with the recommendations provided by the manufacturer of the CNC machines and tools used.
- Keep an abundant and constant flow of cooling water in the working area of the tool so as to prevent the cutter and the quartz from overheating. It is appropriate to keep a greater amount of water in quartz fabrication in comparison with the flow usually used for fabricating marble or granite. The water flow must be directed into the working area of the cutter and in the same rotation direction of the tool.
- Periodically check the tool to verify its state of wear or damage. Make sure that the slab is secured to prevent movement during the fabrication process. If chipping or breakage occurs during fabrication, reduce the feed rate.

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## GENERAL INSTRUCTIONS FOR CUTTING WITH WATERJET

Waterjet cutting is possible thanks to a water jet and abrasive particles at very high pressure (2500 - 5000 bar). The cut generated usually has a width ranging from 1/64" to 1/16". The feed rate affects the quality of the cut, which at high speeds becomes very irregular and serrated on the bottom.

Poor quality cuts can cause the quartz slab to break.

The quality and speed of the cut can be affected by many variables, such as the type of equipment used, the pressures used, the type and amount of abrasive, the equipment software etc.

For this reason, it is essential to consult the equipment supplier for information on operational procedures.

Some generic measures for fabricating are:

- Reduce the feed rate to improve the quality of the cut
- Use abrasives specifically made for use with quartz
- Inspect the equipment regularly
- Use updated software
- When possible, the direction of the cut must be from the outside to the inside
- The cut must begin as far as possible from the piece to be obtained
- Make sure the support surface is in good condition
- Make sure the correct quantity of abrasive is used
- If necessary, reduce the distance between the nozzle and the slab.

# FABRICATION TIPS

## POLISHING EDGES

The edges can be polished with edge polishing machines for stone materials using grinding wheels with a diameter of 5-1/8" specifically for quartz. The piece to be polished must be secured to prevent any movement during polishing. The cooling water must have a steady and adequate flow to ensure sufficient cooling. The feed rate and the pressure of the grinding wheels must be adjusted in order to obtain a good polishing, and may vary depending on the type of machine and abrasives used.

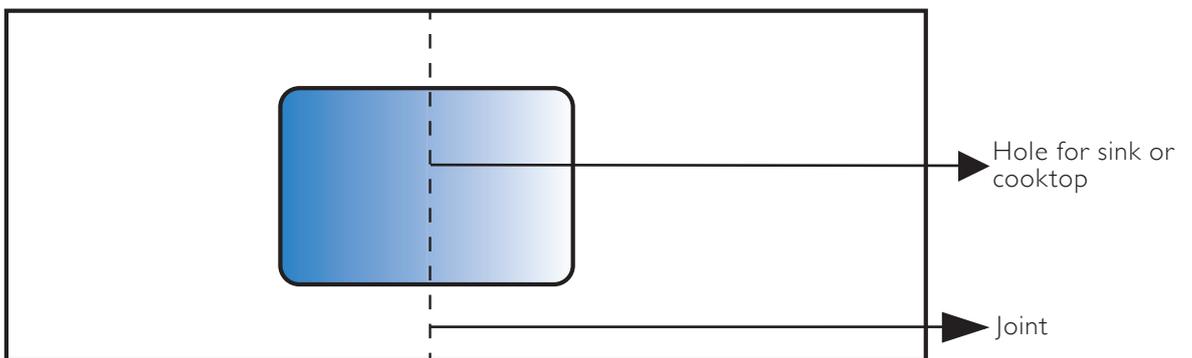
Indicative grinding wheel series to be used for polished finish: 100 200 400 500-800 1500-2000 2000-3000

**NOTE:** Water that is left to dry on the surface of quartz can leave a calcium stain that is hard to remove and may be highly visible on darker colors. It is recommended to remove excess water before allowing to dry on the surface.

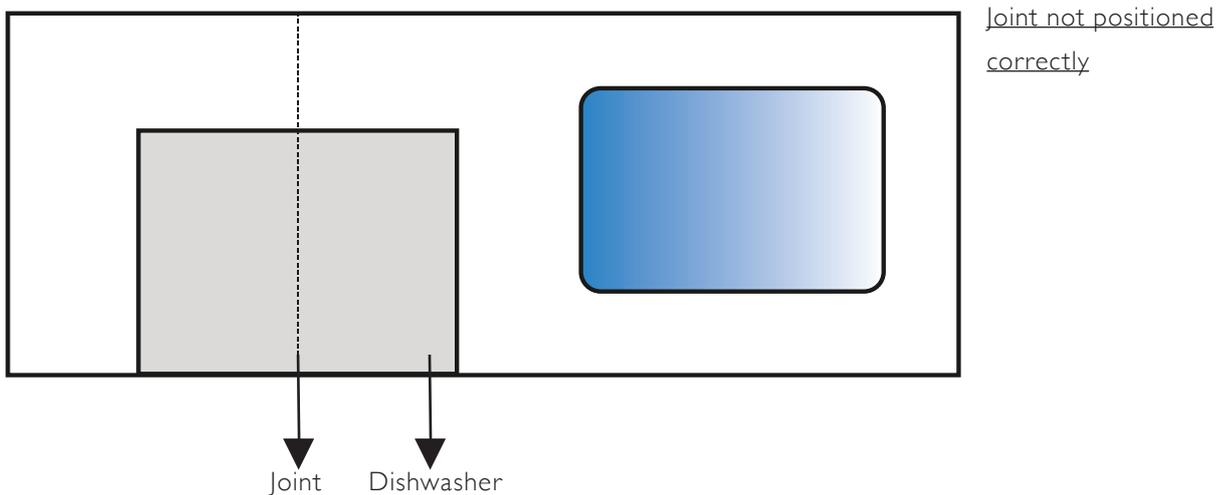
## POSITIONING JOINTS AND GLUING

When planning the joint location on tops made of several pieces, in addition to allowing the maximum use of the slab surface, you must consider certain technical aspects:

- The joint may run through the center of the cut out.

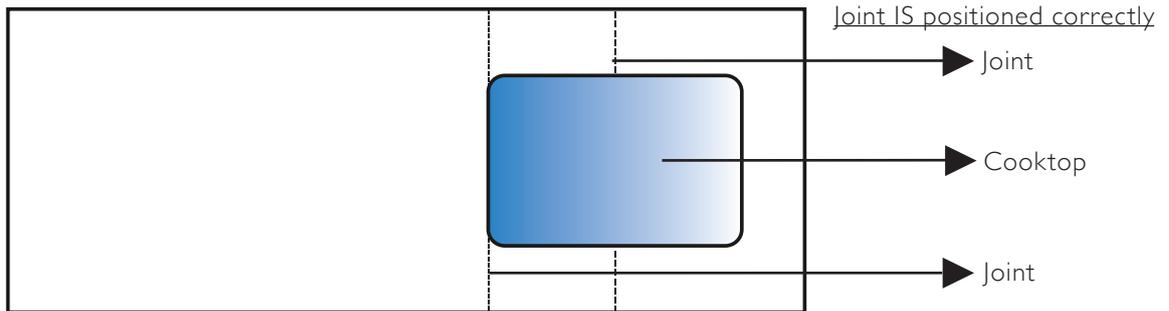


- The joint must not be positioned above the dishwasher or any other household appliance that radiates heat.

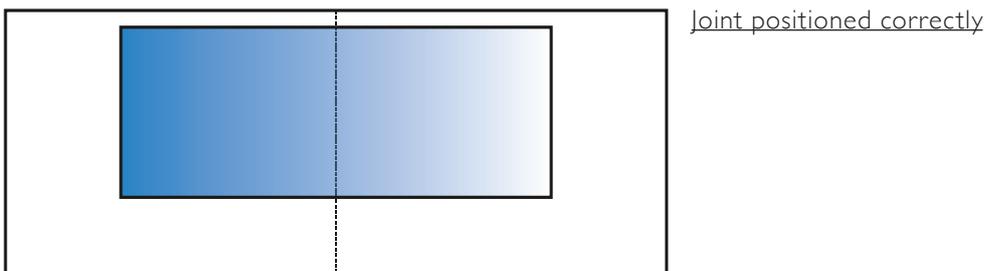
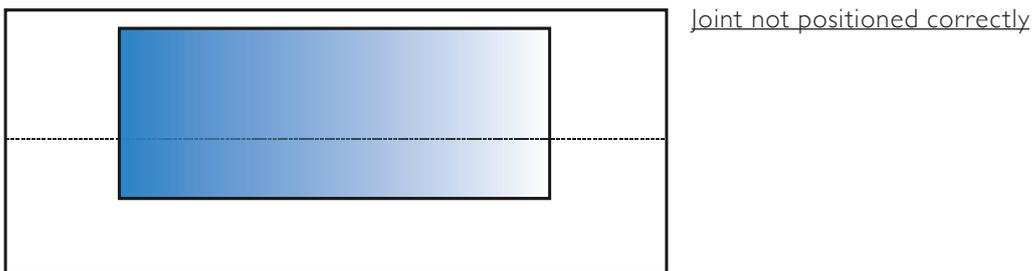
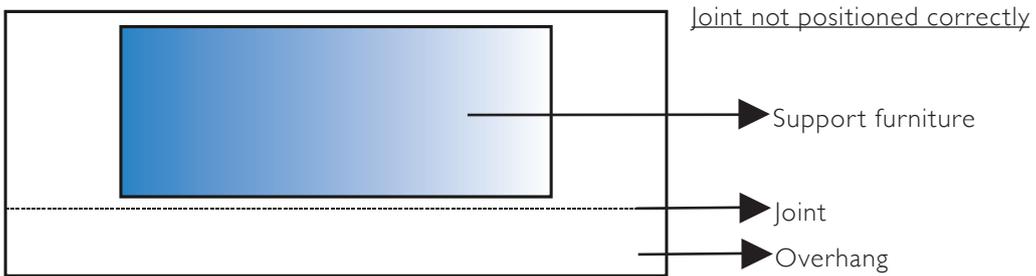


# FABRICATION TIPS

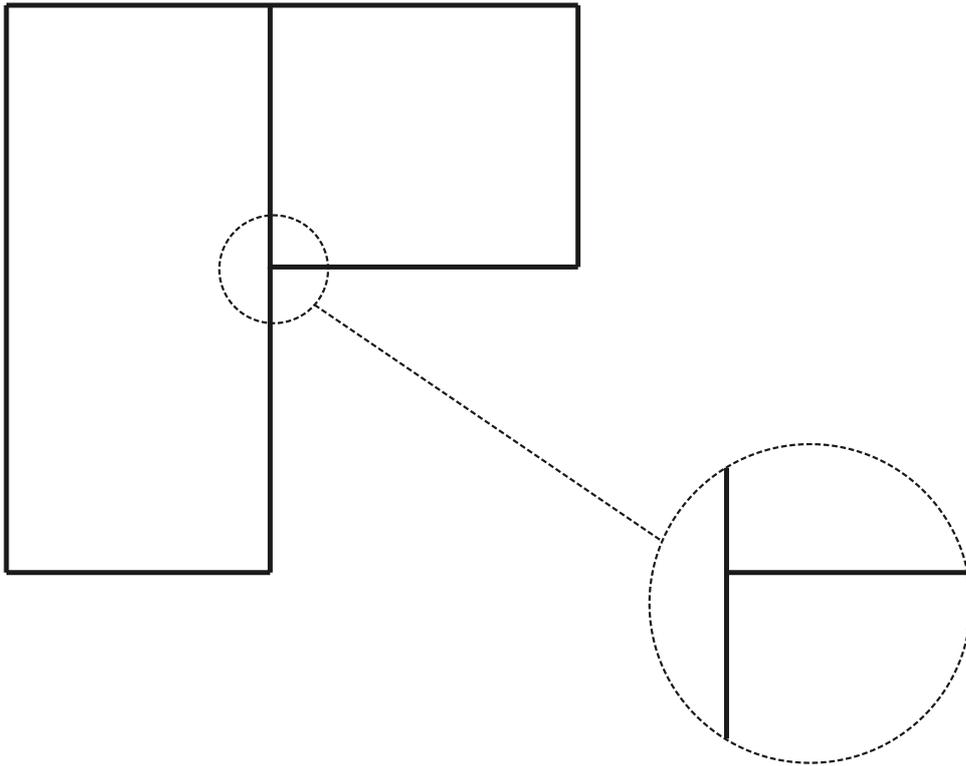
- It is not recommended to position the joint in line with the cooktop.



- The joint must not affect any overhangs.



- If the top is made from two or more pieces and the seam is located at the inside corner, a radius is not required.



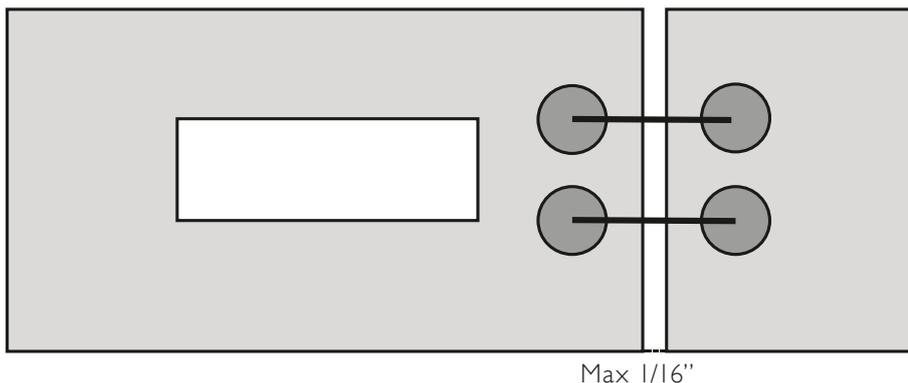
- The joint area must be well supported from below.
- Carefully check the alignment of the two parts before gluing.

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## FABRICATION TIPS

- Use masking tape to protect the edges of the two parts to be glued.
- Use alcohol or acetone to clean the parts to be glued.
- The surfaces to be glued must be rough, flat, dry and thoroughly clean. Do not use A/B epoxies for seaming quartz, as the cured adhesive residue cannot be removed.
- For gluing you can use polyester resin or acrylic epoxies, following the instructions provided by the manufacturer.
- If you need to adjust the color of the polyester based adhesive, use specific colored pigment.
- It is recommended to remove excess mastic from the top before it hardens completely.
- The joint must be as thin as possible (max 1/16"), therefore we recommend the use of proper equipment for the purpose (such as Gorilla Grip system).



- Leave the retaining clips in place until the glue has set, then remove the clips and the masking tape and remove any excess adhesive with alcohol or acetone.
- Avoid joining the two parts mechanically with screws or nails in direct contact with the quartz.

Specific mastics for gluing many products of the quartz range can be found at [www.tenax4you.com](http://www.tenax4you.com) and [www.integra-adhesives.com](http://www.integra-adhesives.com).

# COUNTER INSTALLATION

## INSTALLATION INSTRUCTIONS

Tops must be handled in a vertical position, avoiding twists or impacts. Before proceeding with the installation, carefully check that the counter is not scratched, has no cracks or aesthetic imperfections.

Make sure the support surface of the unit is perfectly level, and if composed of several parts, that these are levelled, adjusting the legs of the unit, if necessary. Gently rest the counter upright on the rear side of the unit, apply some neutral silicone on a few points on the base of the unit and then lower the top by adjusting its position.

In order to keep the counter clean while adhering the back, or joining L-shaped counters, apply masking tape near the areas to be joined and then apply a bead of neutral silicone.

Remove excess silicone with a spatula, razor or putty knife. The masking tape should be removed only after the silicone has hardened. Remove any silicone residue with sharp metal scrapers, taking care not to mark the surface.

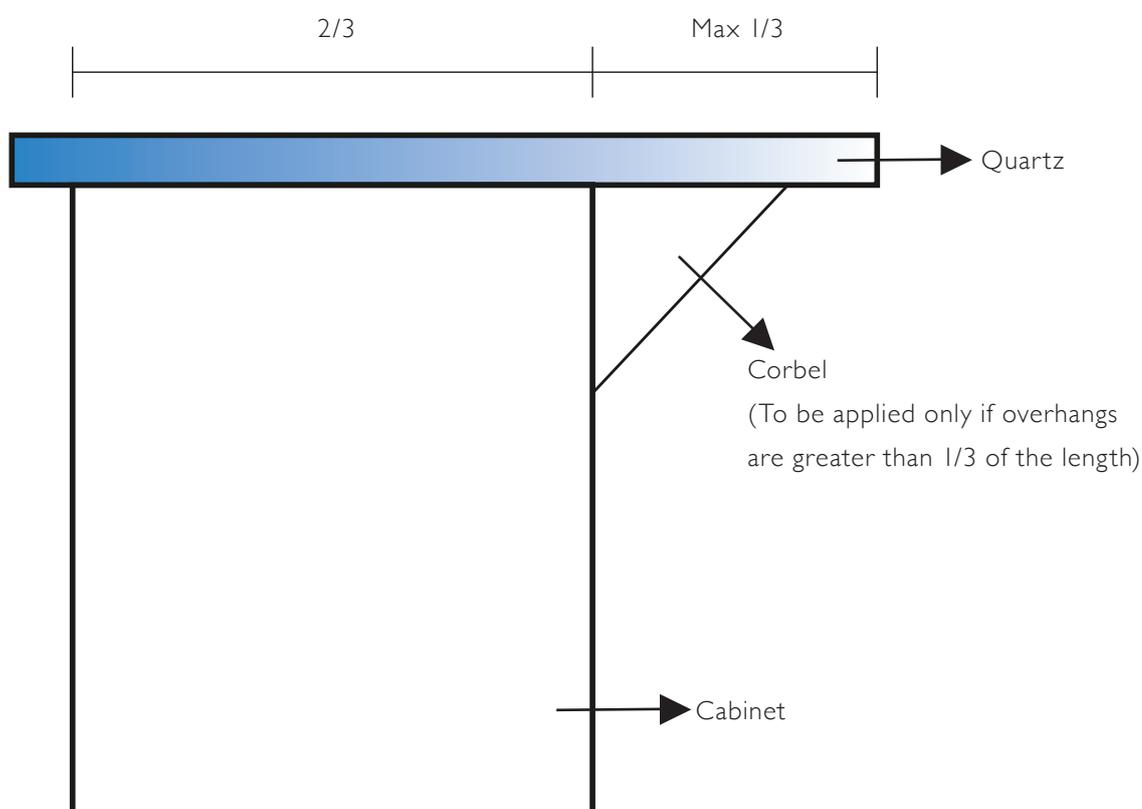
To secure the counter to the unit, only use neutral silicone and not epoxy adhesives or other adhesives. In fact, the silicone guarantees the necessary flexibility to compensate for small movements caused by thermal contraction and expansion.

Leave an expansion space of about 1/8" between the counter and the walls or the units and seal it with neutral silicone, always making sure to first protect the surface with masking tape.

Do not apply pressure to the quartz around any sink or cooktop cut outs.

# COUNTER INSTALLATION

- Overhangs must never be greater than  $\frac{1}{3}$  of the length, and the remaining  $\frac{2}{3}$  of the counter must be well supported.



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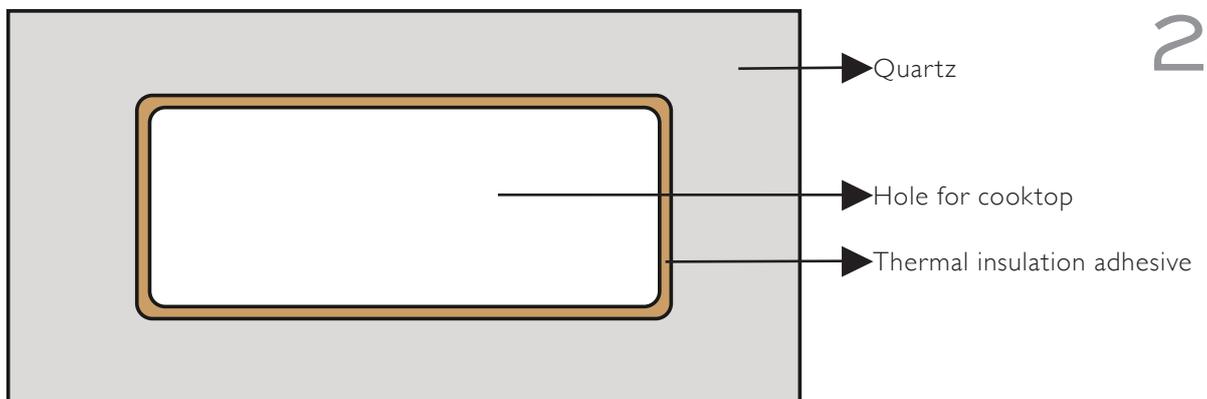
- It is allowed to have an unsupported overhang of 10" for tops that are  $\frac{3}{4}$ " thick and of 13- $\frac{3}{4}$ " for 1- $\frac{1}{4}$ " tops.
- If the overhang exceeds the requirements, it must be supported with brackets, legs or columns.

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## POST INSTALLATION TROUBLESHOOTING

Many problems can occur around the cooktop area due to:

- Excessive heating of the top which causes breakage due to thermal shock or repeated cycles of extreme heat/cold.
- Major weaknesses in the area of the hole, typically in the corners, especially if they are not rounded.
- Incorrect cooktop hole size (the cooktop should not exceed 3/4" over the perimeter of the cut out).
- To reduce the heat transfer from the cooktop, glue specific adhesive tape for the thermal insulation of household appliances on the edge of the hole (1452 Aluminium Tape of 3 M) This tape should never be removed.



# CARE AND MAINTENANCE

## CLEANING AFTER FABRICATION

When slab machining is complete, remove any residue from the counter with running water and a clean cloth.

Thoroughly clean the counter with denatured alcohol or acetone to remove excess adhesive, making sure to not allow acetone to set on the surface for any extended period of time.

If, after cleaning, a haze remains on the surface, rinse again. If there are traces of dirt, clean again. The materials containing mother of pearl should not be washed with acidic cleaners.

On smooth surface tops, we do not recommend the application of a surface treatment, such as protective or sealant wax, which over time may cause loss of shine or unevenness in the surface, if not applied correctly

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## CLEANING AFTER INSTALLATION

On completion of installation, thoroughly clean the surface by spraying an acidic or slightly alkaline pH detergent, specific for quartz-resin agglomerates, on the surface, distributing it evenly with a soft sponge.

Leave it for 5 minutes and then rinse with water until the detergent is completely removed. Remove any excess water with a cloth and dry.

The materials containing mother of pearl should not be washed with acidic cleaners.

**NOTE:** Pay attention to delicate metal parts and other acid-sensitive materials

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