

## **Fabrication & Installation Manual**

ProQuartz is perfect for a wide range of interior, commercial and residential applications. The common applications of ProQuartz slabs are: kitchen countertops, reception counters, flooring, bathrooms, bar tops, vanities, furniture and interior and wall cladding.

One of nature's hardest minerals is quartz, of which ProQuartz contains no less than 93%. This together with superior quality polymer resins and pigments compacted under intense vibration, vacuum and pressure result in a dense, non-porous material.

Do not use ProQuartz surfaces for exterior applications, or areas exposed to excessive heat or UV radiation.

### **Useful information about ProQuartz slabs**

#### **Slab size**

3,250mm x 1,650mm (usable 3,200 mm x 1,600) and;  
3,050mm x 1,440mm (usable 3,000 mm x 1,400)

#### **Thickness**

20mm, +/- 1mm  
30mm, +/- 1mm

#### **Weight**

20mm small	220kg,
30m small	330kg
20mm big	270kg,
30m big	400kg

### **Safety Considerations**

A safe work environment requires all ProQuartz distributors, fabricators and installers to follow the same level of commitment regarding safety and compliance of local occupation, safety and health regulations.

#### **Dress for safety**

When fabricating ProQuartz surfaces, wear the following protective apparel:

- Protective gloves;
  - Steel-capped, non-slip safety shoes;
  - Hair netting for long hair;
  - Safety helmet when handling and transporting slabs;
  - Earplugs;
  - Safety glasses.
  - Dust mask
  - Aprons and steel-capped rubber boots when in wet areas;
- Do not wear loose clothing, neckties, or jewellery that may get into moving parts!

## **Work area and tools**

- A fully equipped first-aid kit should be on site and this should always be re-filled and maintained.
- Do not allow visitors or children near the work site;
- Understand your tools' s potential hazards, applications, limitations and maintenance by reading the instruction manuals;
- Keep your work area clean and neat, well lit, dry and well ventilated;
- Watch your footing and balance at all items;
- Maintain tools sharp and clean;
- Ensure that keys and adjusting wrenches are removed before switching on machinery;
- Both hands should always be free to safely operate tools, so use a vice or clamp to hold work item.
- Never remove the third prong of any plug, Plug three-prong plugs only into three-hole electrical sockets. Adaptors for two-prong sockets must also be attached to the known ground.

All electrical tools must be equipped with a Ground Fault Circuit Interrupter (GFCI).

## **Potentially hazardous Silica Dust**

Although ProQuartz in its final product form is perfectly safe, the product does contain crystalline silica (or quartz). Fabrication and processing (i.e. cutting, sawing, grinding, breaking, crushing, drilling, sanding or sculpting) of such slabs may generate dust which is potentially hazardous to anyone in these areas.

Any physical discomfort should be reported to a physician, but immediate action can be taken as follows: Flush the eyes or skin immediately with water if any irritation is experienced and move outdoors into fresh air if encountering breathing difficulties.

Permissible exposure limits to silica dust must always be adhered to wherever ProQuartz is fabricated and processed. All applicable laws, regulations, orders and directives should be adhered to with a silica control program.

The following websites can assist you with relevant information:

Requirements of the Occupational Safety and Health Administration - [www.osha.gov](http://www.osha.gov)

The European Network for Silica - <http://www.nepsi.eu/good-practice-guide.aspx>

The International Labour Organization - <http://www.ilo.org/safelywork/info.htm>

## **Safety rules**

In addition to the usual safety measures, the following need to be complied with:

- All areas with hazardous dust must be marked with a 'Hazardous dust' sign and a suitable dust mask worn in those areas;
- Change into designated work apparel at the worksite, including shoes and socks;
- Wear protective apparel when cleaning and maintaining machinery;
- Check that the dust intake, filtration and explosion systems are functioning correctly to control dust;
- Prevent airborne dust particles by using wet tools;
- Clean work clothes, machines or floors with a suitable vacuum cleaner and not compressed air;
- At the end of each shift ensure that each work area is clean, then shower and change into clean clothes before leaving the worksite. Wash these clothes before using them again;
- Wash hands and face before drinking, eating or smoking and confine these activities to designated areas free of hazardous dust;
- Local regulations will dictate what medical tests workers are required to undergo.

## **Handling, Transporting and Storing of ProQuartz slabs**

Whether handling, transporting or storing ProQuartz slabs, these must be balanced to the centre gravity.

### **Handling**

Adhere to all the relevant equipment and personnel safety regulations during unloading and transporting of slabs. Note that clamps or straps are preferred for attaching slabs to lifting devices.

### **Transportation**

When loading ProQuartz slabs, attach an appropriate frame (e.g. A –frame) to the truck.

Load the slabs evenly on both sides of the frame face-to-face and back-to-back with no gaps.

Tie the stack to the frame and then the stack with the frame to the truck.

### **Storage**

Support slabs with two support posts (A-frames) spaced 1500-1800mm apart, with the slabs positioned centrally in relation to the posts, and in full contact with the whole height of the posts.

To prevent warping when stored in areas exposed to sunlight and high temperatures, it is recommended that you provide extra support for the slabs. Build a third post on the stand, or place a 30mm thickness slab against the posts.

Place wooden or plastic buffers on the base of the stand to prevent the slabs from chipping.

Store ProQuartz slabs as they are transported, face-to-face and back-to-back with no gaps. The outer slabs should face outwards so the polished surface is not exposed.

When storing slabs on an A-frame ensure that the slabs rest entirely on the base. Slabs can fall if there is uneven pressure on the upright.

Stabilize the stack when there are a few slabs as these may be subject to high winds.

Slabs are to be store slabs under shade wherever possible.

## **Visual Slab Inspection**

Before cutting ProQuartz slabs it is essential to check for imperfections on the front, back and perimeter of the slabs. The protective plastic coating that covers all slabs must be removed for effective inspection.

Inspect each slab looking for:

- Blemishes of any kind or cracks pits or voids;
- Irregular spots;
- Irregular quartz pattern;
- Inconsistent gloss levels;
- Slab-to-slab colour match and colour consistency within the slab;
- Thickness tolerance +/- 1mm for 20mm slabs & +/-1.5mm for 30mm slabs;
- Warping should not be more than 2mm for the entire length and width of the slab.

## **Colour Consistency**

ProQuartz contains at least 93% natural quartz. As a result, slight colour variations between production cycles may occur.

Each slab is identified with a batch number which is stamped on the side of each slab. Use slabs from the same batch for each job to ensure the best colour match. It is still advisable though, to perform a visual colour match to confirm shading consistency.

The batch numbers must be recorded on each fabricators cutting list for possible future reference.

## **Fabrication**

### **Cutting the slab**

Just to straighten the edges, first cut a minimal amount off the outer perimeter of the slab and then continue cutting according to the plan.

After cutting, check the colour match of the pieces to be seamed.

To prevent overheating and generating unnecessary dust, use only water-cooled tools for drilling, cutting and polishing.

### **Straight Lines**

Straight lines can be machine cut with a flat diamond disk mounted on a bridge saw or a table-mounted saw.

Manually they can be cut with a flat diamond disk mounted on a suitable grinder.

The correct diameter diamond disk must be used for the machine and the material.

### **Cutting Curves**

Machine cut curved lines either with a water jet cutter or CNC with a diamond finger bit.

Cut curved lines manually by using a router with a diamond finger bit or a grinding wheel with a concave diamond disk.

### **Drilling Holes**

Holes can be machine cut by using a CNC with a diamond cup drill, a drilling machine with a diamond cup drill or a water jet cutter.

Holes can also be cut manually using a carbide-tipped drill bit, or for larger holes use a diamond cup drill mounted on an angle grinder or a manual drill.

### **Seaming**

A slight diagonal cut should be made along the seam edge from top to bottom. Leave a small straight edge at the top of the inside edge. The resultant gap means that you will have a seam that closes smoothly on the surface and there's space for adhesive underneath.

20mm and 30mm thickness slabs - A groove should be created in the middle of the seam that does not reach the outside edge of the slab that can be seen. You can then apply a wedge of adhesive to strengthen the seam in the space created.

NB – Do not polish seams on ProQuartz surfaces.

### **Inside corners**

L-shaped and U-shaped countertops should always be fabricated with a seam on the inside corner between the slabs pieces.

Every time there is a change in direction of the surface a seam must be created.

## Cut-outs

The installation of stovetops, sinks, and other accessories requires cut-outs in the counter tops. Stick to the instructions of the manufacturer of the installed item when fabricating cut-outs.

A radius of at least 15mm must be fabricated for ALL corners. The larger the radius of the corners of the cut-outs, the stronger the corner will be.

If a 15mm radius is not possible due to the item being installed requiring a 90 degree angle corner, then drill beyond the corner with a cup drill. (Refer to Figure 1 & Figure 2 below)

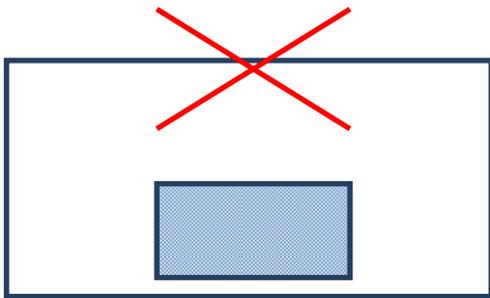


Figure 1: Incorrect

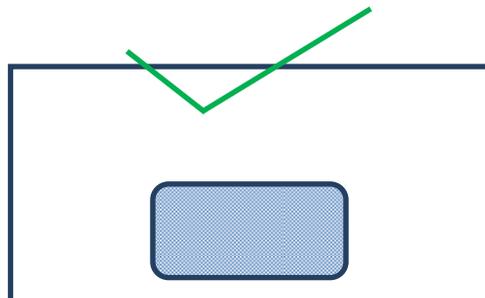


Figure 2: Correct

DO NOT cut beyond the rounded edge in cut-outs! This may result in hairline cracks.

DO NOT reduce the thickness of the surface when preparing the cut-out.

Ensure there is at least a 60mm distance between a cut-out and an edge or a seam.

If this distance between a cut-out and an edge or a seam is less than 150mm it must be supported. Either fit a solid support strip under the area between the cut-out and the edge or seam, or ensure it is located over the junction between the base cabinets.

## Fabricating Cut-outs for Accessories

### Over-mount Installation

Here, the lip of the accessory extends above the surface and rests on it.

Leaving a space between the accessory wall and the ProQuartz surface, smooth the edge of the cut-out with a grinding wheel and leave it unpolished.

### Under-mount Installation

Here, the accessory is placed underneath the ProQuartz surface.

Ensure that the joint between the accessory and the surface is not visible, by fabricating the cut-out slightly smaller than the accessory, then round or bevel the edge and polish the edges of the cut-out.

## Fabricating Edges

Fabricate all exposed edges to the same finish as the surface.

Do not create square edges, round-off or bevel the top and bottom of all edges.

Ensure there is a minimum edge profile of 3mm.

Edges with a larger surface area are more resistant to chipping.

## Laminating Edges

The process of lamination is more complex and time consuming than fabricating single thickness edges. It involves gluing one or more strips of ProQuartz along the bottom edge of another piece of ProQuartz surfaces to make the slab look thicker.

- Cut the lamination strips from the same slab as the countertop;
- To align joints in lamination strips with the surface seams, ensure the lamination strip is the same length as the piece of surface to which it is attached;
- Cut lamination pieces on the outside corners at a 45 degree angle;
- The mitre cut is the best way to laminate edges.

## **Mitre Edges**

### **Why Mitre edges?**

- Mitre edges allow for edges of any height to be fabricated irrespective of the thickness of the slab;
- The pattern around the edge can continue with mitre edges;
- Edge profiles of different shapes and depths can be created with mitre edges;
- Because the polished surface the slab is what is seen, polishing of the vertical part of the mitre is not required.

### **How to fabricate Mitre edges**

- Cut a strip from the slab the same width as the height needed for the mitre edge;
- Ensure the mitre edges are both 45 degrees as the edge might chip if the angle is less than 45 degrees;
- Thereafter, reduce the angle slightly on the back part of the miter with a manual tool to create space for the adhesive;
- Polish the mitre joint according to the radius or bevel profile needed.
- To reduce the risk of chipping, a larger radius is recommended;
- Even application of adhesive throughout the joint will ensure maximum strength.

## **Multi-layered Edges**

### **Why Multi-layered edges?**

- Multi-layered edges are fabricated when one or more lamination strips are added underneath the surface's outer edge;
- The popular double bullnose is created by using this method;
- More design options by using lamination strips of different thickness, and/or colours and recessing one or more of the lamination strips are enabled by having three or more edges.

### **How to fabricate Multilayered Edges**

- Ensure the edges of the lamination strip are perfectly flush before proceeding;
- Glue the lamination strip to the surface;
- To create a finish that is flush and prevents the adhesive showing, clamp the strip to the surface in several places from above and below (no more than 150mm apart);
- After the lamination strip has been glued to the surface, polish all visible areas of the edge.

## **Transportation of the Fabricated Surfaces**

It is essential that fabricated pieces are racked correctly when transporting them to the site.

- A vehicle fitted with an A-frame rack with cross-braces that cater for the size and weight of the slab is required for loading the fabricated pieces;
- To prevent surface damage like scratching during transit or storage, ensure that there is a positive layer between the rack and the fabricated pieces;
- Face-to-face and back-to-back with no gaps, arrange the fabricated pieces on the rack, with each piece fully supported by the adjacent piece;
- Solid pieces should protect pieces with cut-outs, which should be loaded in the centre of the stack;
- Strap the pieces tightly to the rack to prevent them moving while transported;
- Ensure the whole stack with the rack is securely fastened to the vehicle;
- To prevent slabs from falling due to movement or high winds, secure them during loading.

## **Preparing Base Units/Cabinets**

Some useful information regarding the common applications of ProQuartz:

- ProQuartz surfaces are not fixed to the wall, but installed on top of cabinets;
- Cabinets must be stable, level, complete and suitable for bearing the weight of the surface;
- ProQuartz surfaces must be fully supported on a full deck support or a strong perimeter frame;
- In areas of seams, cut-outs and over spaces for appliances like washing machines and dishwashers, the countertop must be properly supported;
- The support underneath the surface should be front to back and every 500mm;
- Under all countertop seams too, support should be provided;
- Under-counter appliances that generate heat should have a wooden board attached between the cabinet tops on both sides.

## **Countertops**

### **Preparing for the installation**

- Without gluing them, place all fabricated pieces in their respective positions on the cabinets;
- Check for correct shape, size and direction in relation to the cabinets and the walls;
- Perform a visual inspection ensuring that all corners and exposed edges have been correctly fabricated and rounded;
- Use a spirit level and long ruler to ensure that the surface is straight and level;
- To allow for expansion and contraction, leave a space of 1mm per linear meter between straight sketches of the surface and each wall;
- Perform final visual inspection.

### **Seaming**

- At the seam, part the fabricated pieces of the surface just slightly, then to prevent the adhesive from sticking the surface to the cabinet, place a layer of paper on the cabinet underneath the seam.
- Prepare a suitable colour-matched polyester resin adhesive, mixing it with pigments with a stainless steel or plastic spatula, if necessary, until achieving the required shade.
- Use only a plastic spatula for mixing light colours.
- Make sure there is no debris on the seam then spread plenty of the adhesive on both sides. Also ensure that the groove in the middle of the seam is filled with adhesive.
- To create a smooth, flush surface, close, secure and straighten the seam with clamps or preferably a professional seaming clamp;
- Remove the clamps when the adhesive is completely dry and then scrape off any excess adhesive.
- Do not polish seams on ProQuartz surfaces.
- Perform final cleaning with alcohol on a clean white cloth.

## **Installation**

### **Overhangs**

An overhang is any surface that doesn't have any construction support directly below it.

Usually extra strength is required for overhangs. Ensure that a professional determines the acceptable overhang dimension, as there are variable factors to be taken into account, such as:

- The length and width ratio of the overhang in relation to the complete length to width of the surface;
- Additional support provided by a wall or other supporting on one or more sides?

The table below provides approximate guidelines for support required for overhangs.

<b>20mm</b>	<b>30mm</b>	<b>Support required</b>
<300mm	<400mm	No additional support is necessary
300-500mm	400-600mm	Use support brackets at 600mm intervals
>500mm	>600mm	Support with Legs, columns or panels

### **Finishing touches**

- Upon completion of installation, clean the ProQuartz surface thoroughly;
- Protect the ProQuartz surfaces by covering them with a protective material such as corrugated cardboard, if more construction work will still be taking place after installation.
- Warn customers not to allow other tradesmen to use the new countertop as a platform to step up or stand on, or as a work bench! Also keep strong solvents or adhesives away from the surface.
- Please leave the ProQuartz Limited Warranty and Care & Maintenance details with the customer.

## **ProQuartz Care & Maintenance**

### **Cleaning**

For cleaning of countertops ProQuartz recommends a mild detergent with water or high-quality spray and a wipe-type cleaner. A non-adhesive sponge or a soft cloth should be used for day-to day-cleaning of ProQuartz surfaces.

As a general rule, use cleaning products within a range of between pH 5-9 to avoid damage to the surfaces. Cleaning products should not be left on the surface for more than 5minutes..

Paint removers, or products that contain trichlorethane or methylene chloride, should not be used.

Residue and dirt should not be allowed to remain on ProQuartz surfaces for extended periods.

Also rinse residue forming oils or powders off thoroughly.

### **Heat Resistance**

ProQuartz is resistant to moderate heat for brief periods of time. Prolonged exposure to more than moderately hot temperature may result in discolouring.

Damage to the surface or hairline cracks may result from excessive heat in one spot.

100 degrees Celsius is the maximum temperature that any Pro Quartz surfaces should ever be exposed to.

Unsupported tops may warp if exposed to temperatures in excess of 70 degrees.

Always use a trivet or insulator between ProQuartz surfaces and any very hot cookware.

### **Scratch Resistance**

ProQuartz surfaces are highly scratch resistant. However, it's not advisable to use sharp knives, screwdrivers or other similarly sharp objects directly on the surface.

## Stubborn Stains or Dried Spills

ProQuartz surfaces are highly stain resistant.

Should a stain occur on ProQuartz surfaces, firstly try to remove the stain with soap and water, or a non-abrasive household cleaner using a damp, soft cloth.

Scrape away any adhered material that may accompany the stain, like dried paint, nail polish, food or gum with a sharp scraper and then follow the instructions below:

### Treating Stains

Type of stain	Cause/Source of stain	Treatment/Remarks
Chemical	Materials containing caustic soda pH10-14	No treatment. Can't be removed
	Fat/grease removers, e.g. oven cleaners	The colour indicates the severity of the burn.
	Hot pressure cooker	Yellow stains can sometimes be removed with
	Hot frying pan	Astonish Marble & Granite Clean & polish.
	Hot saucepan	Brown stains generally cannot be removed
Heat source-direct/indirect	Polishing burn	Astonish Marble & Granite Clean & polish
	Toaster oven	Astonish Marble & Granite Clean & polish
	Grill	Astonish Marble & Granite Clean & polish
	Hot plate	Astonish Marble & Granite Clean & polish
	Oven shelves and trays	Astonish Marble & Granite Clean & polish
	Hot food spillage	10% Bleach
Oil-natural	Olive oil	10% Bleach
	Canola oil etc.	Hydrogen peroxide, max 30 %
Oil-synthetic	Machine oils	Mild alcohol degreaser
Cosmetics	Hair shampoo	Astonish Marble & Granite Clean & polish
	Medical creams	Hydrogen peroxide, max 30 %
	Make-up	Hydrogen peroxide, max 30 %
Metal	Metal kitchen tools (e.g. knives)	Astonish Marble & Granite Clean & polish
	Metal pots	Metal stains may resemble scratches but they
	Metal belt-buckles	are actually metal residue and easily removed
	Rust	Oxalic acid, repeat use for stubborn stains
Food and beverage	Food coloring	Astonish Marble & Granite Clean & polish
	Herbs and spices	10% Bleach
	Red wine	Hydrogen peroxide, max 30 %
	Pomegranates	Mild alcohol degreaser
Product imperfections	Pigment irregularities	Drill out imperfection and repair by plugging
Colors	Ink	Astonish Marble & Granite Clean & polish
	Markers- water based	Alcohol
	Markers- oil-based (permanent)	Astonish Marble & Granite Clean & polish
	Paint	10% Bleach
	Print from supermarket bags	Astonish Marble & Granite Clean & polish
	Blood	Hydrogen peroxide, max 30 %, Alcohol
	Candle wax	Astonish Marble & Granite Clean & polish

		Mild alcohol degreaser
Other	Glue from adhesive tape	Alcohol
	Hard water deposits	Scale remover , Vinager
	Soap stains	Astonish Marble & Granite Clean & polish
		Alcohol
	Silicone	Interflon Fin Degreaser EM30+