

## I. INTRODUCTION

### 1. Purpose

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

### 2. Terminology

The phrase "PentalQuartz" when used in this document refers to any engineered stone in slab, tile or cut to size forms, manufactured, marketed and sold by Pental Granite & Marble or its approved distributors or agents.

"The Customer" used in this document refers to any person, firm or company placing an order with Pental Granite & Marble or its approved distributors ("the Company") for the purchase of any PentalQuartz.

"Product Manual" used in this document refers to the technical information, specification, design, fabrication, maintenance and other data relating to the use and application of PentalQuartz.

### 3. General Information

PentalQuartz is a composite of natural minerals and rocks, mainly Quartz, bound with resin, pigments and other fillers. PentalQuartz is manufactured using the most advanced and latest technology from Breton machinery of Italy.

PentalQuartz is a high quality solid non porous surface product that is resistant to scratches, heat, stains and water. PentalQuartz requires minimal maintenance and the surface remains in immaculate condition for years when properly cared for.

PentalQuartz can be used in a variety of domestic and commercial interior applications including: kitchen and vanity counter tops, splash backs, flooring, wall cladding, stairs, furniture, surrounds, food service counters etc. It can also be used for fire place mantles; however it should not be one fabricated piece with the fireplace opening cut out of the center.

PentalQuartz is manufactured using the world renowned Breton Stone technology (Breton SPA of Italy). The quality of engineered stone will vary from brand to brand depending on the quality of resin and raw materials used in the manufacture of the stone. PentalQuartz has been manufactured using the highest quality of raw materials; as specified and recommended by Breton SPA of Italy

## 4. Limitations and Responsibilities

We have taken every care to provide complete information in this document; this information should be used as a guide in the design, installation and care of PentalQuartz. No warranty, however implied or expressed, is given in relation to the procedures outlined in this Product Manual except that which is required by law.

Pental Granite & Marble assumes that the designers, fabricators and installers using PentalQuartz, are familiar with all aspects outlined in this Product Manual and strictly adhere to the recommendations and specifications described herein. Any deviation from the recommended guidelines may result in the products not performing as expected and may result in the warranty becoming null and void.

Though every care and precaution has been taken in the preparation of this document, Pental Granite & Marble assumes no responsibility for errors and or omissions, or for the damages resulting from the use of information contained in this Product Manual. Pental Granite & Marble shall not be liable for any loss of profit or any other loss or damage caused or alleged to have been caused either directly or indirectly as a result of any person solely relying upon any information contained in this Product Manual.

Pental Granite & Marble reserves the right to change or modify this Product Manual or its electronic version from time to time without notice, it is the responsibility of the Consumer to consult or contact Pental Granite & Marble for the latest version or updates.

## II. VARIOUS APPLICATIONS OF PentalQuartz

### 1. Interior Applications

PentalQuartz is ideal for use in interior applications such as: kitchen counter tops, bathroom vanities, walls, stairs, restaurants, hotels, hospitals, and laboratories and also wherever high quality, sanitary and low maintenance counter tops are required. PentalQuartz offers many advantages:

- Uniform coloring permits coordinated applications.
- Consistent slab size minimizes waste.
- Highly resistant to heat.
- Scratch and chip resistant
- Resistant to stains
- Resistant to acids, alkalis, chemicals and solvents.
- Resistant to mildew and mold
- Immune to freezing and thawing.

Exposure to Unfiltered direct sunlight may result in color change and/or warping. Most windows manufactured in the last 30 years block a sufficient amount of the UV rays to prevent color change or warping, however it should be taken into account, especially in older homes. It is advisable to avoid direct unfiltered sunlight over a prolonged period on the surfaces used in the above applications.

## 2. Fireplace mantles Applications

PentalQuartz can be used for fireplace mantels but is not recommended for fireplace surrounds. PentalQuartz should not make contact with firebox or surfaces exceeding 212 °F (100 °C). Exposure to temperatures above 212 °F may result in localized seam separation or material cracking if not properly installed.

## 2. Exterior Applications

Pental Granite & Marble does not recommend PentalQuartz for use in exterior applications. Its use in an exterior application will void the warranty.

### III. TECHNICAL SPECIFICATIONS

PentalQuartz is a high quality quartz surface product that is long lasting and is practically maintenance free. PentalQuartz has a carefully designed color palette of products that can be used in a variety of domestic and commercial applications. However, PentalQuartz is not an ideal product for exterior use, as exposure to direct sunlight for prolonged periods can result in color changes, fading and/or warping.

#### 1. SPECIFICATIONS; PENTALQUARTZ

PentalQuartz can be manufactured in a wide range of sizes and thicknesses to accommodate any application. However some may be available on a special order bases only. For information about availability, minimum purchase quantities, and lead time, please contact your sales representative.

*PentalQuartz slab sizes:*

- 1.2cm (1/2") – 3000mm x 1200mm (119x55) – Select colors only*
- 2cm (3/4") – 3000mm x 1400mm (119 x 55)*
- 3cm (1 3/16") – 3000mm x 1400mm (119 x 55)*
- 3cm (1 3/16") – 2997.2mm x 1400mm (118 x 26) – Select colors only*
- 2cm (3/4") – 3302mm x 1651mm (130 x 65) – Select colors only*
- 3cm (1 3/16") – 3302mm x 1651mm (130 x 65) – Select colors only*

#### 2. PentalQuartz; color, Surface Finish and Pattern

PentalQuartz manufacturing process is renowned worldwide and contains 90- 93% of natural quartz and 7-10% combined bonding agent, special additives and pigments, making it an extremely hard wearing, practical and highly versatile surface.

PentalQuartz, the ultimate in stone technology and sophistication, has a color palette ranging from the subtle beige tones to the vibrant beauty of the luminescent Starlight Colors, which provide you the opportunity to perfect your individual style and decor.

PentalQuartz slabs are generally available in the polished finish; select colors are available in a honed, brushed, or satin finish. However, a honed finish may be supplied to special projects in other colors, on a case by case basis.

### 3. PentalQuartz; Color Consistency and Tonal Characteristics

Variation in color may occur from batch to batch of PentalQuartz slabs and tiles due to the location from which the natural material is sourced. The composition of natural quartz and granite particles used in the products may sometimes produce minor irregularities such as crazing in the grains, blotches, spots, colored particles. Such imperfections are generally accepted by the industry.

PentalQuartz is a non-porous product, but very fine micro pores could be present in certain colors/finishes and is unavoidable during the manufacturing process.

**It is the responsibility of the fabricator to visually verify color match of any slabs to be fabricated and installed prior to cutting.**

#### 4. PentalQuartz; Technical Characteristics

Characteristics	Test Method	PentalQuartz (Range of Values)
Density	ASTM C97 EN 14617-1	2.2-2.4 gr/cm <sup>3</sup> 2.2-2.4 gr/cm <sup>3</sup>
Water Absorption	ASTM C97	≤0.03%
Flexural Strength	ASTM C880 EN 14617-2	6,200 -11,000psi 42.7-75.8 MPa
Dimension Stability	EN 14617-12	Class A
Electrical Stability	EN 14617-13	Volume resistance (R <sub>v</sub> )= 0.9x10 <sup>14</sup> Ω Volume resistivity (ρ <sub>v</sub> )= 4.9x10 <sup>14</sup> Ωm
Impact Resistance	ASTM D1709	27lbs (122N)
Compressive Strength	ASTM C170 EN 14617-15	22,000-28,000 psi 190 – 220 MPa
Abrasion	ASTM C1243	Volume of chord: V=89-194mm <sup>3</sup>
Freeze-Thaw Resistance	ASTM C1026	No detects after 15 freeze-thaw cycles
Mohs Hardness Scale	EN101	6.0-7.0
Microbial Resistance	ASTM D6329 -98 (2003)	Ranking 3: Resistant to Mold Growth
Resistance to Chemical Acids	ASTM C560	Not affected
Slip Resistance at Honed 400	DIN 51130	R9-R10
Determination of resistance to immersion in boiling water	AS 2924.2-7 1998 (EQUIV. TO ISO 4586.2-7 1997)	Effect of surface (rating): 5 (no visible change)
Determination of resistance to dry heat	AS 2924.2-8 1998 (EQUIV. TO ISO 4586.2-8: 1997)	Effect of surface (rating): 5 (no visible change)
Determination of resistance to thermal shock	AS 2924.2-9:1999 (EQUIV. TO ISO 10545-9: 1994)	Specimens showing defects: NIL
Determination of resistance to staining (Procedure A)	AS 2924.2-15: 1998 (EQUIV. TO ISO 4586.2-15: 1997)	Effect of surface (rating): 5 (no visible change)

**NOTE:** *The values quoted above for PentalQuartz are an average range of values of the different products tested and should be considered as an indication only. The test results may vary between colors and different production runs.*

MICROBIAL RESISTANCE: ASTM D6329-98  
Tested and Approved by Green Guard

## IV. GENERAL INSTRUCTIONS TO CUSTOMERS

### 1. General Instructions for Fabricators

When taking delivery of PentalQuartz, please make sure of the following:

- Check all the slabs for uniformity of color and granulometry (aggregate distribution) as slabs vary in color and granulometry from batch to batch.
- Check the slabs for any surface defects including: Contamination of grains, fine fissures, stains, chipping, warping and thickness variation.
- Do not transport slabs horizontally and use proper "A" frames to transport the slabs. Always keep the polished surface protected and remove any sharp tools or implements from the vicinity of the slabs to avoid scratches on the polished surface.

If you detect any of the above defects after taking delivery of the slabs, and prior to cutting, do not proceed with the processing and return the slabs immediately.

### 2. Product Identification

Each slab has a serial number label on one side of the slab. This number is also referenced on your packing list. Serial number(s) of installed slabs must be given to the owner of the property of the installation, for proper processing of the warranty.

If a slab is cut, and used on two different installations; the serial number for the slab must be given to the owner of each property so they may each register their installation. The act of splitting the slab between different installations will not have any bearing on the warranty, as long as the installations would otherwise meet the warranty criteria. Any removal or intentional alteration of identifying information will void the material warranty.

## V. DESIGN AND INSTALLATION GUIDE

### 1. Tips for Fabricating PentalQuartz

When fabricating PentalQuartz, care should be taken when cutting. Tension within the slab can cause cracking. Following these simple rules can minimize the chance of this occurring

- When planning a plunge cut, drill a 1" relief hole at the termination point of the cut, prior to beginning the cut. Always cut **towards** the relief hole
- When planning a "U" shaped cut, mark and drill relief holes where the cut lines will intersect.
- Always make the shortest cuts 1<sup>st</sup>.

- When planning an “L” shaped cut, mark and drill relief holes where the cut lines will intersect. Always cutting the shortest length 1<sup>st</sup>, and cutting towards the relief hole.
- When planning a cut that will be the full length of the slab, either with a plunge cut, or starting at the edge, mark and drill a relief hole at the termination point of the cut, then cut towards the relief hole.

## 2. Kitchen / Vanity Cabinets

Prior to installing counter tops, care should be taken to check the cabinets and base units for the following:

- Strong and stable, the cabinets and substrate base should be able to withstand weight in excess of 12lbs per Sq. Ft.
- All units are fastened to both the wall and between the base units.
- Cabinets are leveled properly. The top of the cabinets must be plumb, true, and flat. Make sure that the level does not vary more than 1/16” over 10’
- Remove any nails, screws or sharp edges from the surfaces where the tops would be placed.

## 3. Installation of Counter Tops

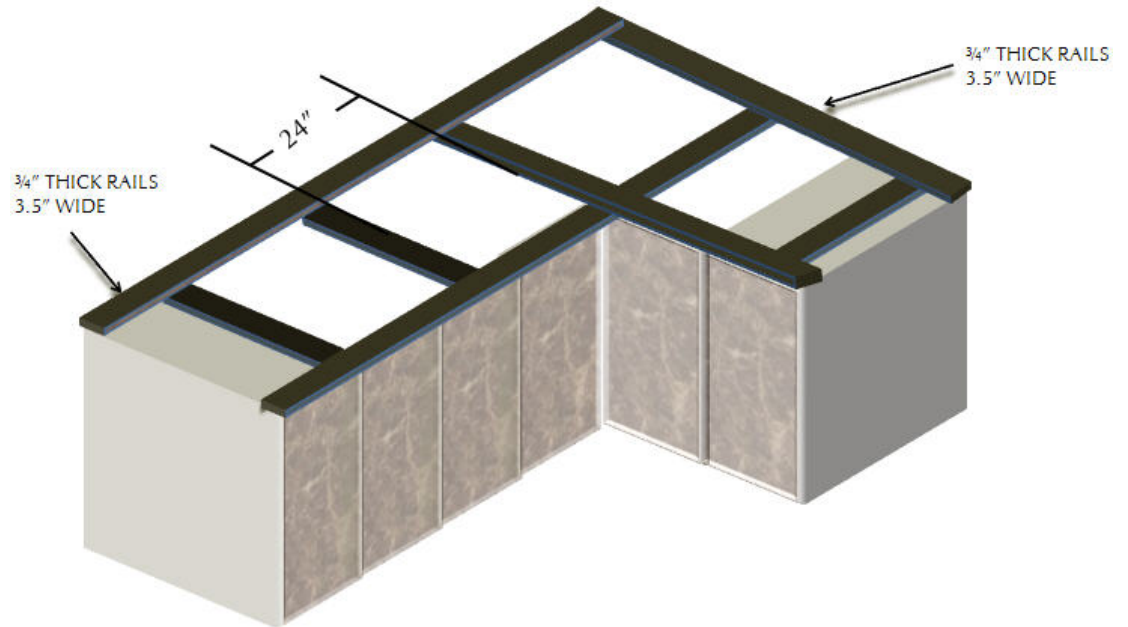
No two kitchen countertops are the same; however there are some general guidelines for installing PentalQuartz counter tops. When installing 3cm material, as long as the base cabinets are level, and they allow for the same support outlined below, no additional support is needed. When installing any material less than 3cm in thickness, you must insure that there is proper support for the counter top. For material less than 3cm thick, the base supporting the counter top can either be Complete Perimeter support or Complete Underlay support.

- Rarely will all the walls be perfectly square. Please make allowance for such imperfections prior to cutting. Clearance of at least 1/8” should be maintained between the PentalQuartz surface and surrounding walls.
- Counter tops should be placed on a very sound and solid frame or a base which is perfectly plumb, level and true.

### Complete Perimeter Substrate Support

- Support the top, both front and back with a rail of not less than 3.5” in width and 5/8” thick. Then support the back of the slab with rails 3.5” wide spaced at regular intervals of approximately 24”, as shown below
- It is important to provide a minimum of 1/8” between the edge of the slab and the wall so that any expansion in the wall or slab, due to temperature variation can be accommodated. An additional gap of 1/8” per 5’ for all counter tops exceeding 10’ should be provided.

- Apply dabs of flexible 100% silicone adhesive, at regular intervals of not less than 12" apart on the back of the top, then place the top gently, and level the tops before the adhesive gets hard.



### Complete Full Substrate Support

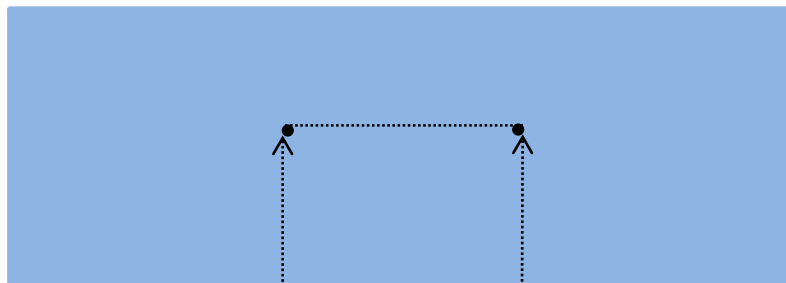
Alternately the complete surface area of the counter top can be supported over the kitchen cabinets with full width self-supporting underlay made up of plywood with a minimum thickness of 5/8" .



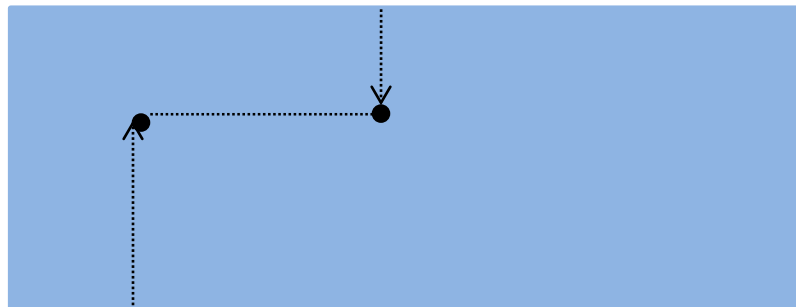
#### 4. Cutting PentalQuartz



When making a plunge cut, drill a relief hold 1" in diameter near the end of the cut.  
IMPORTANT: *always* cut toward the relief hole.



When cutting a "U" shaped piece, mark, and drill relief holes where the cut lines intersect, always making the shortest cut 1<sup>st</sup>.



When cutting an "L" countertop, drill relief holes where the cut lines intersect, always making the shortest cut 1<sup>st</sup>.



If ripping the full length of the slab, drill a relief hole prior to cutting. Always cut towards the relief hole.

## Recommended water jet settings

Before fabricating PentalQuartz, cutting table should be completely flat for best results.

Orifice size: .0140

Abrasive Flow Rate: .16

Initial cut for approx. the first 10-15 seconds at low pressure: 8,000 - 10,000 PSI

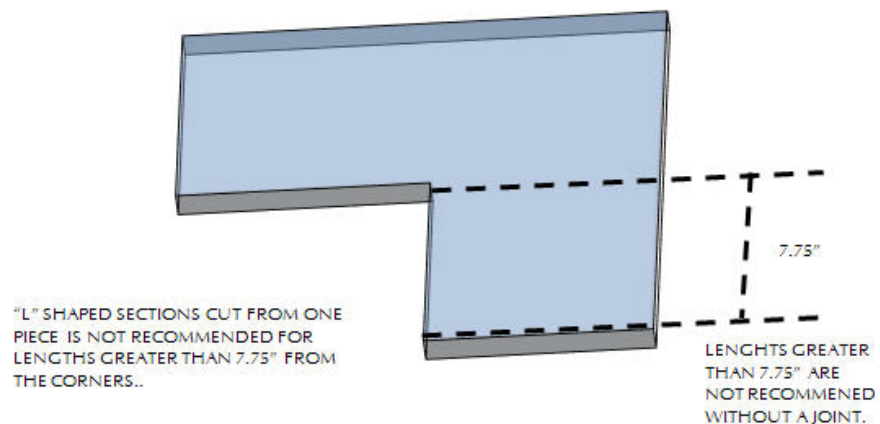
Then increasing to high pressure for the balance of the cutting of the piece: 43,000 - 45,000 PSI

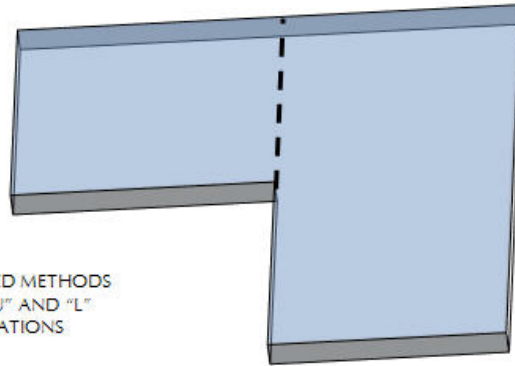
Feed Rate: 2.5 in/min. Initially at low pressure. Increase to 3.5 - 3.75 in/min. for the remainder of the cutting at high pressure.

NOTE: Recommendations and settings may vary depending on a number of factors including but not limited to equipment and abrasive materials used. Please consult with your equipment's manufacturer for optimal material cutting recommendations for your water jet.

## 5. Planning and Installation of Tops with Joints & Cut Outs.

- Do not place joint within 6 inches of a planned cut out, such as for a sink, cook top, etc.
- Pental Granite & Marble does not recommend installing "L" shaped counter tops without a joint at the corner of the "L" shape, due to various mechanical stresses to be experienced by such tops after installation. Fabricator should use their own discretion when fabricating.





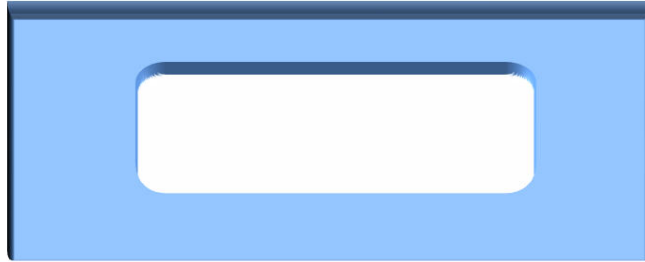
RECOMMENDED METHODS  
OF JOINT IN "U" AND "L"  
SHAPED FABRICATIONS

- All the joints in the tops should be well supported from underneath.
- All the joints should be properly cleaned with acetone or denatured spirit to get rid of dust and grime.
- All the sides of the joints should be grooved or slotted in the middle so that the glue joining the two slabs will be well distributed for good adhesion.
- Check that the top is well aligned, both along the joint(s) and also along the front.
- Check that the top is leveled properly and is plumb and true.
- Use paper masking tape at the joints so that the glue applied to the joints does not move to the polished face.
- Ensure that the joints are perfect and then place clamps at the joints until the adhesive sets properly.
- zOnce set, remove the masking tape and clean off any excess adhesive and the contact surface, with acetone or denatured spirit.
- Do not fasten any mechanical fasteners like screws and nails directly into PentalQuartz.
- Seams should not be placed directly over a dishwasher or other appliance that may radiate heat.

If you are planning to make your cut outs on site, it is essential that the operation is in an area where you can use wet tools. It is not recommended that you cut the sink or cook top cut outs, on the top of cabinets with dry cutting tools.

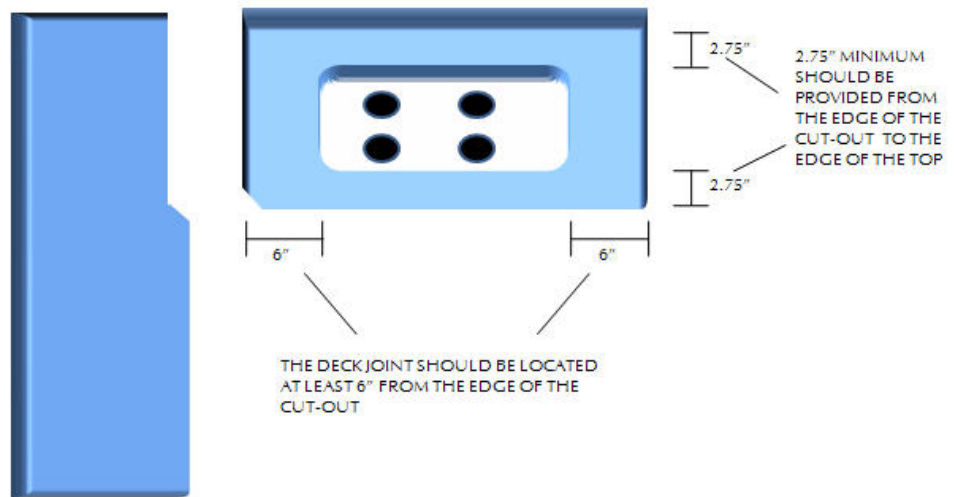
All the cut outs should be cut using only wet cutting tools to avoid generating excess heat to the tops and the corners. The radius of the corner should be around  $\frac{1}{4}$ ". When cut out are planned allow extra  $\frac{1}{8}$ " between the appliance edges and the top cut out sides. This is essential to accommodate any expansion that may develop in the top due to temperature changes.

INTERNAL CORNERS OF CUT-OUTS SHOULD BE ROUND. PRIOR TO CUTTING, DRILL THE CORNERS WITH A DRILL, 1/2" MINIMUM HOLE DIAMETER.



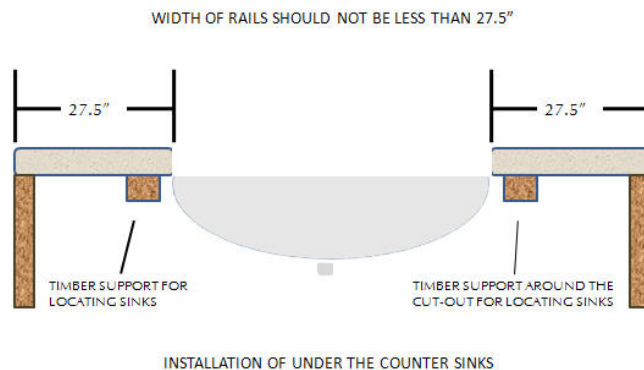
PLANNING CUT-OUTS

- All care should be taken when installing appliances, like cook tops and sinks etc. Read the instruction manual that was supplied by the appliance manufacturer prior to installing the appliances. Make sure that all the brackets and supporting hardware are included.
- Center all the appliances in the cut out and make sure that you allow a minimum of 1/8" space between the inside edges of the appliance the cut out walls.



RECOMMENDED METHOD FOR INSTALLING HOT PLATES.

- Position all the appliances in place and make sure that the seals provided with the appliances are properly placed prior to tightening the fasteners. All fasteners should be only finger tight, never use force in tightening the fasteners.
- Any appliances weighing more than 11lbs should be adequately supported by the cabinet frames.



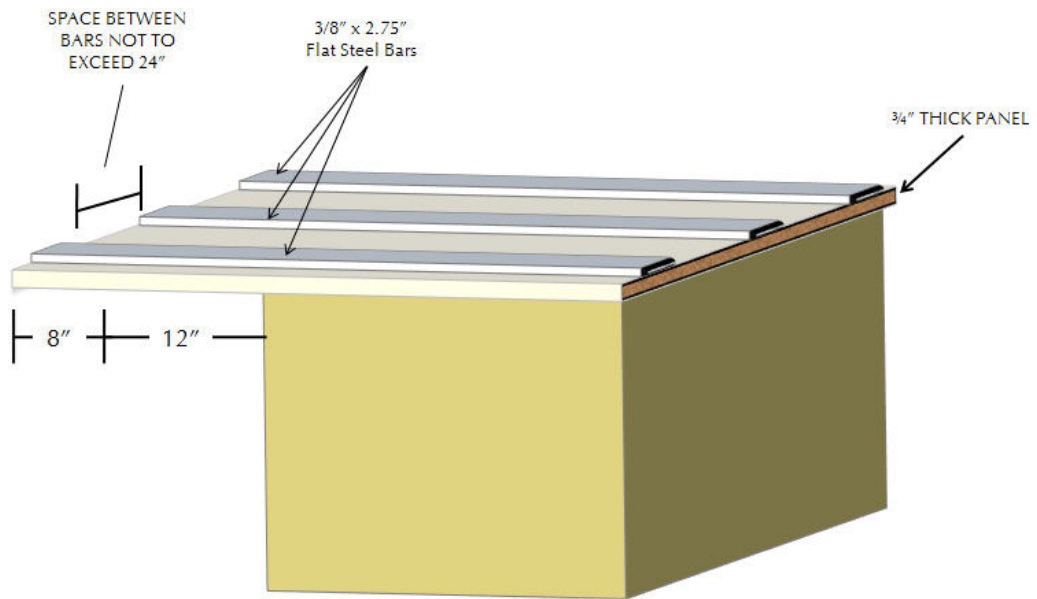
- All of the joints between counter top and appliance edges can be sealed with a high quality transparent flexible sealant. Clean any excess sealant immediately.
- Uneven thermal distribution may occur in areas above dishwasher and over hot water plumbing systems which may cause the top to crack. To avoid this all the hot water plumbing should be thermally insulated; it is a good practice to make the tap holes slightly oversized so that the hot plumbing system is not direct contact with the product.

## 6. Overhang and Supporting Brackets:

All overhangs should be properly supported. Any overhang that exceeds 16" for 2cm with 5/8" sub top and 3cm material (8" for 2cm) shall require the support of a 3/8" thick steel bar, no less than 2.75" wide or appropriate L-Brackets to support the potential weight load, placed underneath the top. If a 1 1/2" laminated edge is used, then piece pasted to the top can extend the whole width of the overhang to take some stress placed on the overhang.

If the overhang is less than 20" then general practice is to provide a support base made up of timber and the brackets placed approximately 20" apart. The brackets should be fastened to a backer plate, which is secured to the cabinet or wall with screws. All overhangs exceeding 20" should be supported with proper metal or solid wood legs.

2cm (3/4")	2cm (3/4") With 5/8" Sub Top	3cm (1 1/4")	Material Support Required
Less than 8" (200mm)	Less than 16" (400mm)	Less than 16" (400mm)	No Additional Support Required
8 - 16" (200mm - 400mm)	16 - 24" (400mm - 600mm)	16 - 24" (400mm - 600mm)	Brackets Required at 24" (600mm) Intervals
Over 16" (400mm) Intervals	Over 24" (600mm) Intervals	Over 24" (600mm) Intervals	Legs, Columns, or Panels Required at 24" (600mm)



SUPPORT DETAILS FOR OVER HANG EXCEEDING 12"

## 7. Installation of Backsplash

PentalQuartz can be used for a backsplash application in wet areas, behind wash basins, sinks, and behind cook tops. However, when installing backsplashes behind gas cook tops and heat generating appliances, it is important that the installer must follow all instructions and safety requirements as outlined by the appliance manufacturers, as well as conforming to any local building standards or codes.

The installer must also ensure that the following general guidelines are strictly followed:

- Make sure that the walls are vertical and free from dirt and grime; if needed clean the entire surface.
- It is not advisable to install a backsplash on gyprock boards and any paper lined gypsum product.
- The backsplash pieces should be thoroughly cleaned on the back and on the top, place it in the area to be installed and check whether the pieces fit properly.
- After the pieces of cladding satisfactorily fit, then clean the surface of contacts with acetone or denatured spirits and apply dabs of transparent two part epoxy glue to both the surfaces of the contact and place the cladding. It is not advisable to use grout between the cladding and the counter top. Use a flexible silicon based sealant to fill the gap between the counter top and backsplash.

## 8. Cladding Walls:

PentalQuartz can be used for all internal cladding of walls and vertical applications. The installation of vertical panels varies from location to location. When designing and installing vertical panels and cladding, it is necessary to take the mass of the product into account and the services of an experienced structural engineer should be sought during the design and installation phases.

If fasteners are needed for safe installation, care should always be taken; Damage caused by the attachment or use of Mechanical Fasteners is not covered by the warranty.

## 9 . Fabricating Thassos, Lattice, Venatino, Calacatta, Carrara, Onixaa, Statuario, Avenza, and Borghini:

It's because of the Cristolbalite content inside BQ100, BQ8220, BQ8440, BQ8270, BQ8530, BQ8550, BQ8628, BQ8660, and BQ8670 that special care is needed when fabricating.

As the fabricator you can try a few combination of polishing tools when polishing edges of BQ100/BQ8220 to find optimum working conditions. At the factory, the slabs are polished with the following combination of polishing tools:

Spindles: 7

The first time: 50 grit - 50 grit - 100 grit - 100 grit - 100 grit - 100 grit - 200 grit

Second time: 200 grit - 400 grit - 600 grit - 800 grit -1000 grit - 1200 grit - 1600 grit.

As fabricators may have different machines, but 100 grit polishing pads before start with 200 grit pad, then, the results may be OK.

Relief cuts and relief holes are effective ways to address mechanical stress in these colors. It is necessary to use one or both in the fabrication process to insure that the slabs are not damaged in cutting.

- To make a relief cut for a long section of material began by measuring in from the adjacent edge 1 or 2 inches. Make the relief cut at that point parallel to the final edge of the slab for a distance of 20 inches. Once this cut is made proceed with the long final cut to produce the final edge of the piece 1 or 2 inches back from the relief cut



- The process for making and using relief holes is described in section 4.

## 10. Installation of Tiles:

Selecting PentalQuartz slabs or tiles for a wall or floor application is an excellent choice that offers the flexibility and visual impact not previously available in the market place. However, as with any tile application it is important to follow the correct method for affixing the tile that is most suitable for that specific application.

Installers tend to affix engineered tiles in the same way they handle ceramic tiles, using adhesives meant for ceramic tiles. Such practices have lead to failures in installation.

The environment of every tile installation is different, and the installations can be handled in a number of ways. It is important for installers to take into consideration, the following characteristics of the materials that make the different aspects of an installation, if the final installation is to function successfully.

- Differential movement
- Structural deflections
- Foundation movements
- Thermal movements
- Moisture movements
- Radiant Heat Source
- Dimensional stability

Most importantly the thermal movement (expansion and contraction) of engineered tiles should be taken into consideration when designing a tiling system, as engineered stones have a much higher linear thermal expansion when compared to natural stones and ceramic tiles.



Moisture movements both permanent and reversible may occur due to moisture content of the environment. Engineered stones have been known to possess appreciable reversible moisture movement.

Dimensional stability refers to the ability of an engineered stone tile to resist curling or warping when exposed to water contained in the adhesives. When the tile surface absorbs moisture the surface of the wet side expands more than the dry side, the result of this is that tiles tend to warp.

The adhesive manufacturers have vast experience in the installation of a Tiling system using Engineered Stones. Accordingly, we strongly recommend that the installer should consult the relevant manufacturers and seek their advice prior to installation of PentalQuartz slab and tile.

Custom Building Products: <http://www.custombuildingproducts.com>

Mapei: <http://www.mapei.com>

Laticrete: <http://www.laticrete.com>

Pental Granite & Marble, Inc. does not accept any responsibility nor does it recommend a particular method of installation, it is the responsibility of the installer/buyer to design the tiling system based on the advice obtained from the engineered tile adhesive manufacturers.

## VI. CARE & MAINTENANCE

### 1. Countertops & Floors

PentalQuartz is a high quality solid non porous product that is resistant to scratches, heat, and stains. However, PentalQuartz is not heat, stain and scratch proof. PentalQuartz requires minimal maintenance and the following care and maintenance guidelines will help to keep the surface in immaculate condition for years.

### 2. General Routine Care and Maintenance

- PentalQuartz is highly resistant to stains caused by fruit juices, liquid food coloring, coffee, tea, wine, grapes, soft drinks, paints, nail polish and remover, automotive fluids, and permanent markers. Should a spill occur, wipe off the stained area with any commonly available multi-purpose cleaner or household detergent and then rinse area with ordinary water immediately. For more stubborn spills and stains, repeat the procedure several times and use a soft, non-metallic scouring pad to remove the stain. It is possible that some of the stubborn stains may leave a light mark or very slight discoloration of the stones.

### 3. Preventing Heat Damage to Countertops

PentalQuartz is designed and manufactured to withstand moderate heat but the **product is not heat proof**. The Thermal Shock resistance is increased with the increase of the thickness of the material; 3cm slabs are far more resistant to heat than a 1cm slab. Like any other composite material, PentalQuartz may be damaged by a sudden and/or lasting exposure to

high temperatures, mainly at the edges and cut outs of the product, resulting in cracks. To prevent thermal shock, discoloration or other damages, it is necessary to use insulating pads or trivets when putting hot objects aside and not to expose the surface to open flames or prolonged contact with very hot pots. We always recommend using a hot pad or trivet, especially when using cooking appliances such as electric frying pans, crock pots, or roaster ovens.

#### **4. Use of Common Kitchen Implements**

Common kitchen implements including sharp knives won't harm PentalQuartz, as it is made up of pure natural quartz. Continued use of kitchen knives on the counter top could dull the polished surface. Care should be exercised when moving heavy objects and avoid dropping heavy kitchen tools. Any type of chopping tool or cleaver may damage the PentalQuartz surface.

#### **5. Removing Foreign Materials**

If food, chewing gum, nail polish, paint or any other foreign material is found sticking to the top/floor, simply scrape away the material with a sharp blade or sharp plastic scraper. The use of a metal scraper may leave grey metal marks on the surface, and nylon non-abrasive scouring pad can easily remove them. Wash and rinse the surface in the normal way with water.

#### **6. Exposure to Chemicals and Solvents**

PentalQuartz can be permanently damaged by prolonged exposure to strong chemicals and solvents. It is advisable not to use hydrofluoric acid, or any product such as oven cleaners or drain cleaners containing trichlorethane or methylene chloride and paint strippers.

#### **7. Exposure to Direct Sunlight**

PentalQuartz slabs and tiles, when exposed to direct sunlight may result in color change and warping. It is advisable to avoid direct sunlight over a prolonged period.

#### **8. Maintenance of Floors**

Dust, grit, and barrier materials from the floors should be removed on a daily basis by sweeping with a soft brush and when necessary by use of a machine. Sand, rocks or other debris can scratch the Quartz Based Tile floor and those surfaces should always be kept free from dust, sand and soil. PentalQuartz surfaces can be easily cleaned with warm water and mild household detergent, using a standard mop. Make sure the floor is completely dry before allowing people to walk on it.

## 9. Maintenance of Honed and Satin Finishes

PentalQuartz offers you not only a wide range of colors, but of finishes as well; including polished, honed, satin, and brushed. Just as each finish has a different look; it also has slightly different characteristics.

PentalQuartz is a beautiful and durable non-porous surface. Some colors are available in our HONED or SATIN finish which offers the soft appearance of a lower sheen compared to the POLISHED finish. The HONED and SATIN finishes require slightly more maintenance than our polished finished materials. Since the honed or satin finish actually creates more surface area to the material it has the potential to show more signs of living from daily use. Possible marks from metal cookware or utensils; fingerprints, food and beverages, and other items placed on, or moved across the countertop, may be visible on the surface. Most marks can be easily removed with a cloth or sponge; or by using household cleaners such as a cleaning eraser or carefully scrubbing with a sponge and a non-abrasive cleaner such as Soft Scrub Advanced Cleaner®. Over time the Honed or Satin finish will develop character and a patina unique to each customer.

Honed and satin finishes can be cleaned using the same products and methods as other finishes, please see our care and maintenance guide at: [www.pentalquartz.com](http://www.pentalquartz.com)

Signing this document acknowledges that you fully understand the unique characteristics of a honed and satin finishes. That it will be more likely to show scuffs, marks, and fingerprints, and it will require more frequent or intense cleaning and maintenance to keep it free from marks.

Warranty issued by Pental Granite & Marble for PentalQuartz covers manufacturing defects; however the temporary marks that commonly occur on honed and satin finishes, are inherent to the material, and are not covered under the terms of the warranty.

## 10. Clear shipping plastic removal

PentalQuartz is protected during transportation by a plastic protective cover. The plastic and its acrylic adhesive should be removed using the method described below.

1. Strip away plastic sheeting.
2. Wash away the remaining adhesive with "warm" water and a small amount of mild soap. Warm is defined as between 104°-120° Fahrenheit. Clean the whole surface of the slab.
3. Wait for 5-10 minutes.
4. Repeat steps 2 and 3 as necessary until the surface is free of adhesive.
5. Rinse with cool water.

Note: Do **NOT** use chemicals such as alcohol or acetone! The use of solvents to remove the film causes the adhesive to dissolve and create a chemical reaction which may change the appearance of the slabs surface and will not be covered under the product warranty.

## 11. Advise to the Installer

It is the duty of the installer to advise customers of the important aspects of Care and Maintenance for PentalQuartz.



## Technical Bulletin

### Proper use of Chemicals on quartz surfaces

While quartz is very resistant to various chemicals, there is a risk of damage to the finished surface from prolonged exposure to certain chemicals.

#### **Proper use of acetone and other chemicals:**

1. Acetone may safely be used to remove excess adhesive near edge details and material seams. Acetone may also be used to clean the finished surface of Pental Quartz of stains, fabrication markings, or templating residue.
2. Acetone should be applied to a cloth for cleaning and not poured directly on the material surface.
3. Chemical bottles or metal cans should not be left on the material surface as it is possible to trap liquid under the container and cause damage to the Pental Quartz finish.
4. Acetone soaked cloths should not be placed or left on the material surface for prolonged periods of time as this can cause damage to the material finish.
5. It is possible for acetone or other chemicals to become trapped under the protective plastic on slabs during the fabrication process. In order to avoid this potential issue it is again recommended to only apply acetone to a cloth for cleaning and not pour the liquid on the slab surface. Make sure to clean any spills immediately and remove plastic from any areas exposed to the chemical spill.
6. Below is a list of other chemicals that could potentially damage or affect the finish on Pental Quartz. This list is not all inclusive as there are other potential chemicals that may damage the material. The degree of any damage experienced may vary based upon the chemical, concentration, and the length of time of exposure.
  - Dyes, stains, drain cleaners, oven cleaners, paint thinner or strippers.
  - Stone sealers, enhancers, agers, or other topical treatments.
  - Solvents such as acetone, nail polish, lacquer thinner, or bleach (short-term exposure is acceptable for purpose of cleaning difficult stains, but these chemicals should be removed and thoroughly rinsed away within five minutes of application)
  - Chlorinated solvents such as trichloroethylene or methylene chloride
  - Benzene, toluene, methyl ethyl ketone
  - Concentrated acids such as hydrocyanic acid, hydrofluoric acid, hydrochloric acid, sulfuric acid, nitric acid, or muriatic acid.
  - Chemicals with high alkaline/PH levels above 8.5

In case of contact with any of the above chemicals, immediately rinse thoroughly with water.