

PRODUCT MANUAL

FOR QUARTZ & RESIN BASED ENGINEERED COMPOUND STONE



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 word Pompeii Quartz used in this document refers to any Engineered stone in slab, tile or cut to size forms, manufactured, marketed and sold by Pompeii Quartz or its approved distributors or agents.

The word “the Customer” used in this document refers to any person, firm or company placing an order with Pompeii Quartz or United Materials, Inc. (“the Company”) for the purchase of any Pompeii Quartz.

The word “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 Pompeii Quartz.

3. General Information

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

Pompeii Quartz is a high quality solid non porous surface product that is resistant to scratches, stain, water and heat. Pompeii Quartz requires minimum maintenance and the surface remains in immaculate condition for years.

Pompeii Quartz can be used in a variety of interior applications including kitchen and vanity bench tops, splash backs, flooring, wall cladding, stairs, furniture, fire place mantles and surrounds, lift cab floors and walls, food service counters etc.

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

4. Limitations and responsibilities of Pompeii Quartz and the consumer/s.

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

The Company assumes that the designers, fabricators and installers using Pompeii Quartz, are familiar with all aspects outlined in this Product Manual and strictly adhere to the recommendations and specifications described in the manual for use with Pompeii Quartz only. 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.

A word of caution for people who are using this Product Manual, though every care and precaution has been taken in the preparation of this document, The Company assumes no responsibility for errors and or omissions, or for the damages resulting from the use of information contained in this Product Manual. Under no circumstances, the Company 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.

The Company 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/s to consult or contact their local Pompeii Quartz distributor for accessing the latest version or updates.

II. VARIOUS APPLICATION OF POMPEII QUARTZ:

1. Interior applications:

Pompeii Quartz is ideal for use in the interior applications such as: bench tops – kitchens, bathrooms – vanity tops, floors and walls, stairs, fire places and surrounds, restaurants, hotels, hospitals, and laboratories and also wherever high quality, sanitary and maintenance – free bench tops are required. The use is comparable to that of natural stone, with the following additional advantages:

The uniformity of coloring permits additional, coordinated applications

- Minimum wastage of material used due to consistent size of the slabs
- Natural defects such as veining, pores, cracks or fissures are eliminated
- Highly resistant to heat
- Scratch and chip resistant
- Resistant to stains
- Resistant to acids, alkaline, chemicals and solvents
- Resistant to mildew and mold
- Immune to freezing and thawing

Pompeii Quartz when exposed to direct sunlight may result in color change and warping, it is advisable to avoid direct sunlight over a prolonged period on the surfaces used in the above applications.

2. Exterior Applications:

The company does not recommend Pompeii Quartz for use in exterior applications, as Pompeii Quartz when exposed to direct sunlight may result in color change and warping.

III. TECHNICAL SPECIFICATIONS

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

1. Pompeii Quartz Specifications:

Pompeii Quartz slabs sizes: 118 x 55 x 1/2 or 3/4 inches.

Pompeii Quartz tiles: Available in most of the colors in 12 x 12 in; 16 x 16 in; 24 x 24 in. The thickness of the Tiles can be: 3/8 in, 1/2 in, 3/4 in. Tiles are calibrated for both dimension and thickness and beveled around the edges.

2. Pompeii Quartz color, surface finish and pattern:

Pompeii Quartz manufacturing process is renowned worldwide and contains more than 93% of natural quartz, 7% combined bonding agent, special additives and pigments, making it an extremely hard wearing, practical and highly versatile surface.

Pompeii Quartz slab is generally available in the gloss finish; however, honed finish can be supplied by special request.

3. Pompeii Quartz color consistency and tonal characteristics:

Variation in color may occur from batch to batch of Pompeii Quartz 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.

Pompeii Quartz is a nonporous product but very fine micro pores could be present in certain product range and is unavoidable during manufacturing process.

4. Pompeii Quartz Technical Characteristics

CHARACTERISTICS	TEST METHOD	UNIT OF MEASUREMENT		POMPEIIQUARTZ'S QUARTZ (Range of values)
Density	ASTM C 97	Kg/dm ³		2.3 – 2.5
Flexural Strength (Modulus of rupture)	ATM C 880	PSI	DRY	7.74 – 7.82
			WET	4.87 – 8.31
Water absorption	ASTM C 97	%		0.005 - 0.02
Compressive Strength	ASTM C 170	PSI	DRY	22.08 – 29.89
			WET	15.76 – 29.89
Breaking Load	ASTM 648	Lbs		1207 – 1340
Coefficient of Thermal Expansion	ASTM C 531 - 0	200 to 1000C AT (10-6/C-1)		20.1 to 31.9
Hardness	EN 101	Moh's scale		6 – 7
Tensile Strength	ASTM D 638	MPa		17.8
Resistance to deep abrasion	ASTM C 241	Index		58 -63
Wear resistance of the Surface (Abrasive power Index)	ASTM C 501			113 to 212
Slip resistance	DIN 51130	HONED 400 POLISHED		R9 – R10
Resistance to chemical acids	ASTM C 560			NOT AFFECTED
Bacteria & Fungal resistance	ASTM G 21			NO GROWTH
Suitability for use in Kitchen Bench tops	EMPFEHLUNG XII BGVV			SUITABLE

Note: The values quoted above for Pompeii Quartz are average range of values of the different Quartz products tested and should be considered as an indication only. The test results may vary depending on the colors and also the batches of the products.

IV. GENERAL INSTRUCTIONS TO CUSTOMERS

1. General instructions to installers:

When taking delivery of Pompeii Quartz sheets, 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 and for warping and thickness variation if any.
- Do not transport slabs horizontally and use proper “ A” frames to transport the slabs. Always keep the polished surface covered with plastic film and remove any sharp tools or implement from the vicinity of the slabs to avoid scratches on the polished surface.

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

2. Product Identification

Pompeii Quartz sheets carry product identification label on one side of the slabs giving the details of the product.

V. DESIGN AND INSTALLATION GUIDE

1. Kitchen / Vanity Cabinets:

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

- Strong and stable, the cabinets and the sub strata base should be able to withstand Pompeii Quartz bench top of weight in excess of 120 to 130 pounds per square meter.
- Units are fastened to both the wall and between the base units
- Check that the cabinets are leveled property. The top of the cabinets must be plumb and true and flat. Make sure that the level does not vary by a maximum tolerance of 1/20 inches over a length of 9 feet.
- Remove any nails, screws or sharp edges from the surfaces where the tops would be placed

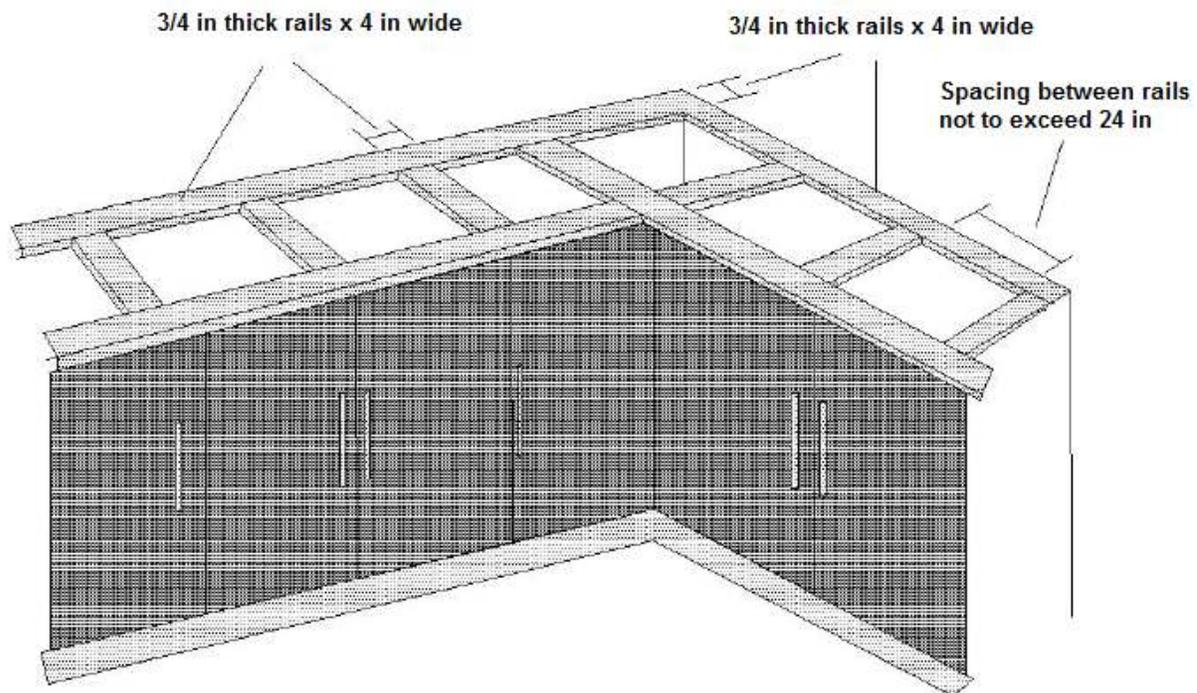
2. Installation of Bench Tops:

No one kitchen bench top is the same as the other, however, we have given below some guidelines for installing Pompeii Quartz bench tops. The base supporting the Pompeii Quartz bench top can be either Complete Perimeter support or Complete underlay support.

- It is not common to have all the walls perfectly square. Please make allowance for such imperfections prior to cutting.
- Bench tops should be placed on a very sound and solid frame or a base which is perfectly plumb and true level.

Complete Perimeter substrate Support:

- Support the top both front and back with a moisture resistant rail of not less than 3.5 inches wide of $\frac{3}{4}$ inch thickness. Then support the back of the slab with 4 inch wide rails spaced at regular interval of approximately 24 inches apart as shown below.
- It is important to provide a minimum of $\frac{1}{10}$ inch between the edge of the material and the wall so that any expansion in the wall or top due temperature variation in the atmosphere could be accommodated. Additional gap of one mm per lineal meter should be provided for bench tops lengths exceeding three meters.
- Apply dabs of flexible glue at a regular intervals of not less than 1 inch apart on the back of the top then place the tops gently and level the tops before the glue gets hard.



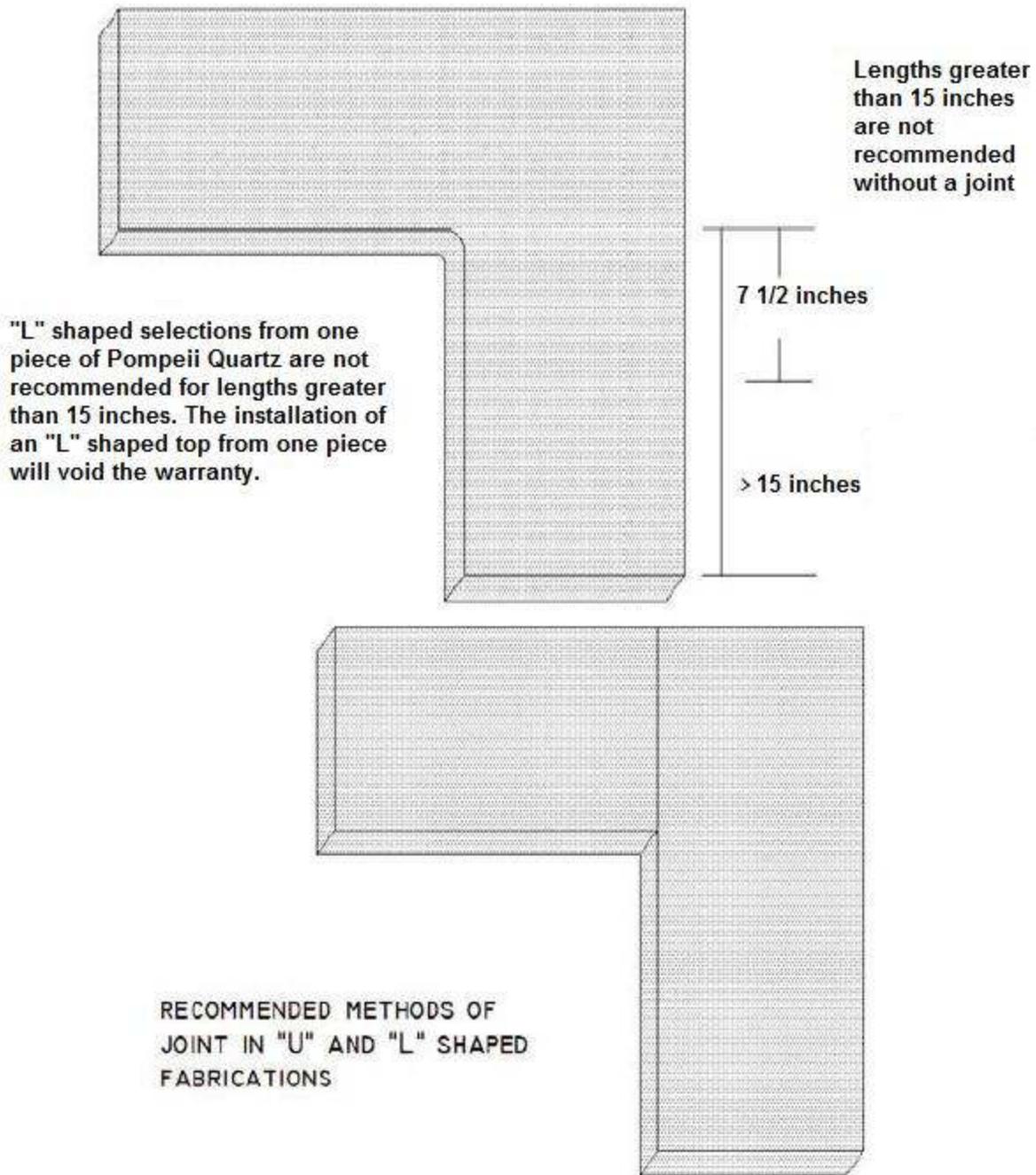
Complete Full substrate support

Alternately the complete surface area of the bench top can be supported over the kitchen cabinets with full width self supporting underlay made up of high moisture resistant MDF or marine plywood of minimum thickness of $\frac{3}{4}$ inch.

3. Planning and installation of tops with joints & cut-outs

- It is important when planning the joints that the cut outs for the sink and cook top etc are not placed $\frac{1}{2}$ inch from the joints.
- Pompeii Quartz does not recommend installing “L” shaped bench tops without a joint at the corner of “L” shape due to various mechanical stresses to be experienced by such tops after installation (example settlement of floors, cabinets etc.). Fabricator should use his own

discretion when installing “L” shape bench tops as our warranty does not apply when “L” shaped bench tops are fabricated from one piece of Pompeii Quartz slabs



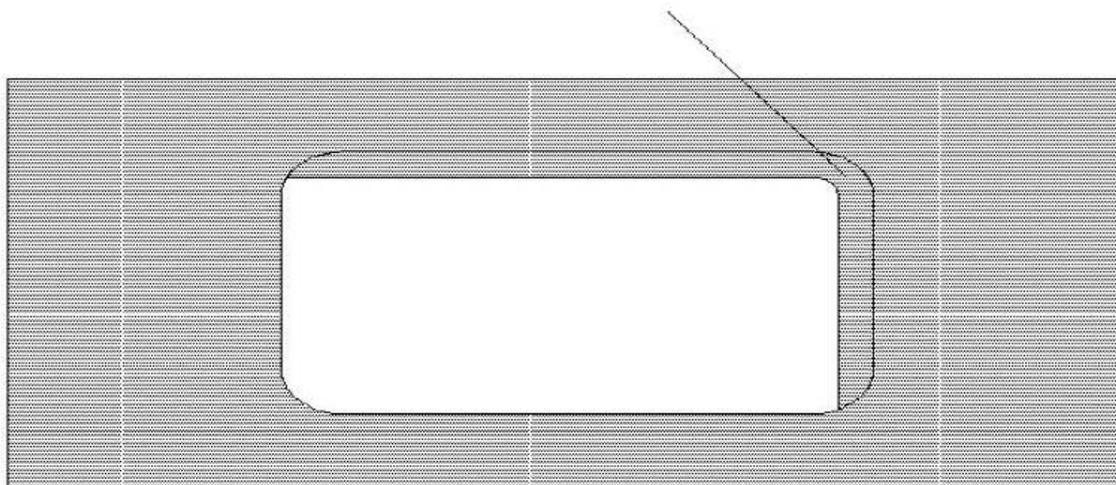
- All the joints in the tops should be well supported underneath.
- All the joints should be properly cleaned with acetone or denatured spirit to get rid of all the dust and grime.
- All the sides of the joints should be grooved or slotted in the middle so that the glue joining the top will be well distributed for good adhesion.

- Apply the flexible glue to the joints and also for joining the frame to the bench tops.
- Check that the top are well aligned both along the joints and also along the front and check that the tops are leveled properly and plumb and true. Use paper masking tape at the joints so that the glue applied to the joints does not move the polished face.
- Ensure that the joints are perfect and then place clamps at the joints until the adhesive sets properly.
- Once the joints properly set, remove the masking tape and clean off any excess adhesive and also the contact surface with acetone or denatured spirit.
- Do not use any mechanical fasteners like screws and nails to Pompeii Quartz.

If you are planning to cut the cut outs at site of installation, it is most essential that the operation is one in an area where you can use wet tools freely. Never attempt to cut the sink cut outs and 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 $\frac{1}{4}$ inch. When cut outs are planned allow an extra $\frac{1}{8}$ inch 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 of the atmosphere.

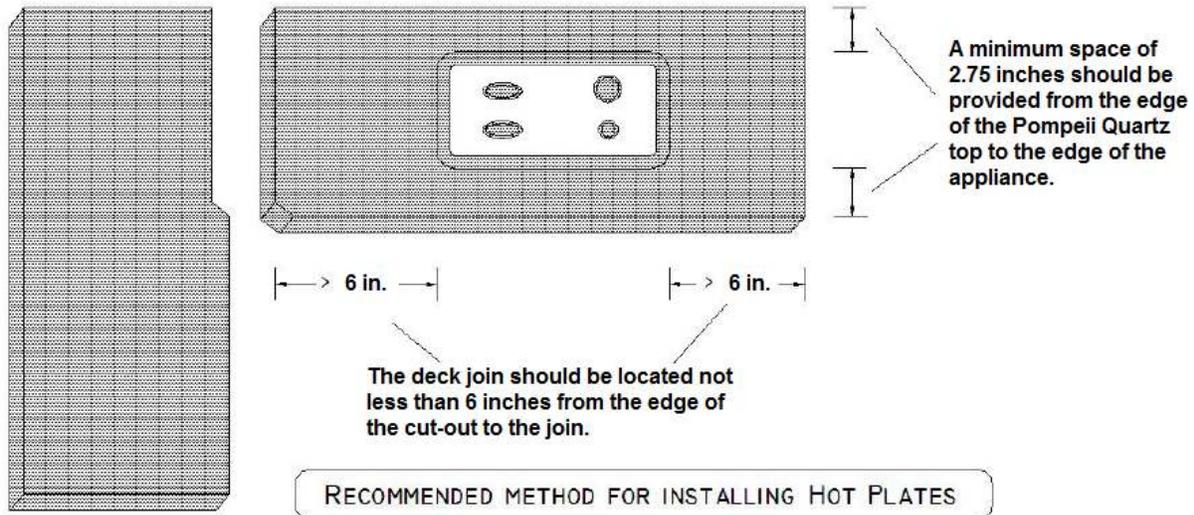
INTERNAL CORNERS OF THE CUT-OUTS SHOULD BE ROUND. PRIOR TO CUTTING CUT-OUTS, DRILL THE CORNERS WITH MINIMUM DRILL HOLE DIAMETER OF $\frac{1}{2}$ inch.



PLANNING CUT-OUTS

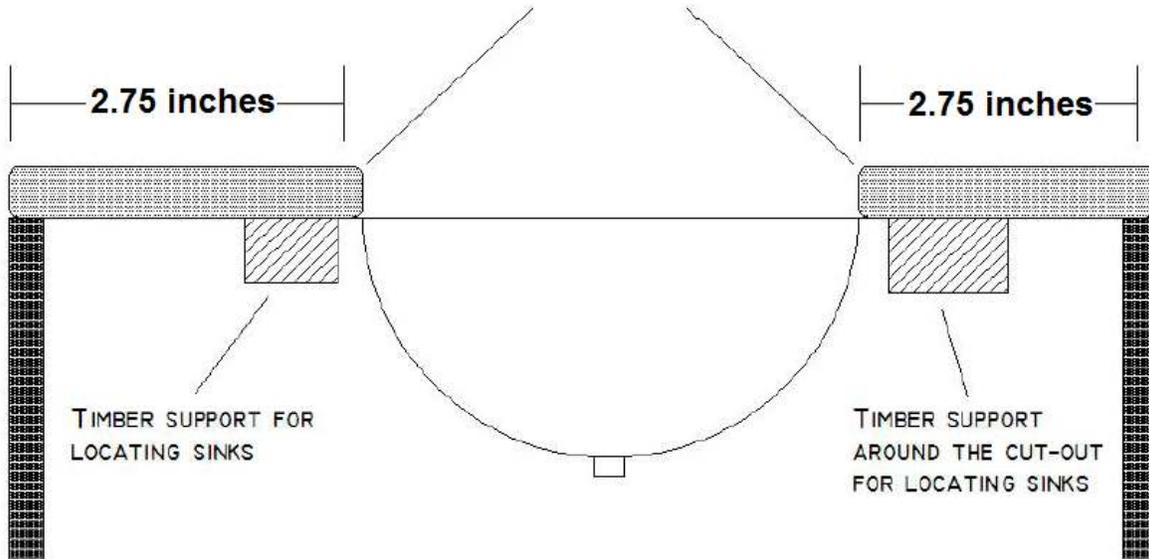
- All care should be taken when installing appliances like cook top and sink etc. Read the instruction manual that was supplied along with the appliance prior to commencing installing the appliances. Make sure that all the brackets and supporting nuts are with the pack.

- Care should be taken when joining the tops above any heat generating appliances (i.e. under bench oven). Avoid joints above such heat generating appliances. The warranty becomes null and void if any joints are placed above such appliances.
- Center all the appliances in the cut out and make sure that you allow minimum of 1/10 inch space between the inside edges of the appliance and the cut out walls.



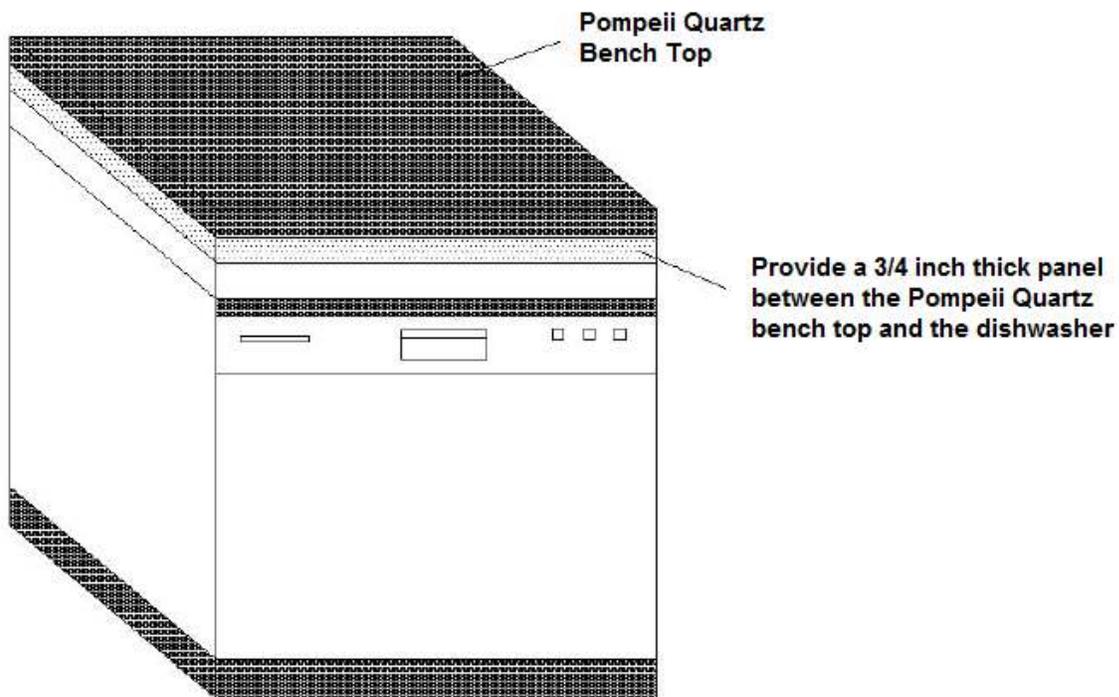
- Position all the appliances in place and make sure that the seals provided with the appliances are properly placed prior to tightening the fasteners to keep the appliances in place. All the fasteners should be only fingering tight never use force in tightening the fasteners.
- Any appliances weighing more than 12 pounds should be adequately supported by the cabinet frames.

The width of Pompeii Quartz rails should not be less than 2.75 inches wide.



INSTALLATION OF UNDER THE COUNTER SINKS

- All the joints between countertop and the appliance edges should be sealed with a high quality transparent flexible sealant. Clean any excess sealant immediately.
- Uneven thermal distribution over part of the bench top may occur in areas above the 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 in direct contact with the product and when installing the dish washer it is essential to use a $\frac{3}{4}$ inch thick moisture resistant board or marine plywood above the dishwasher in the cabinet.

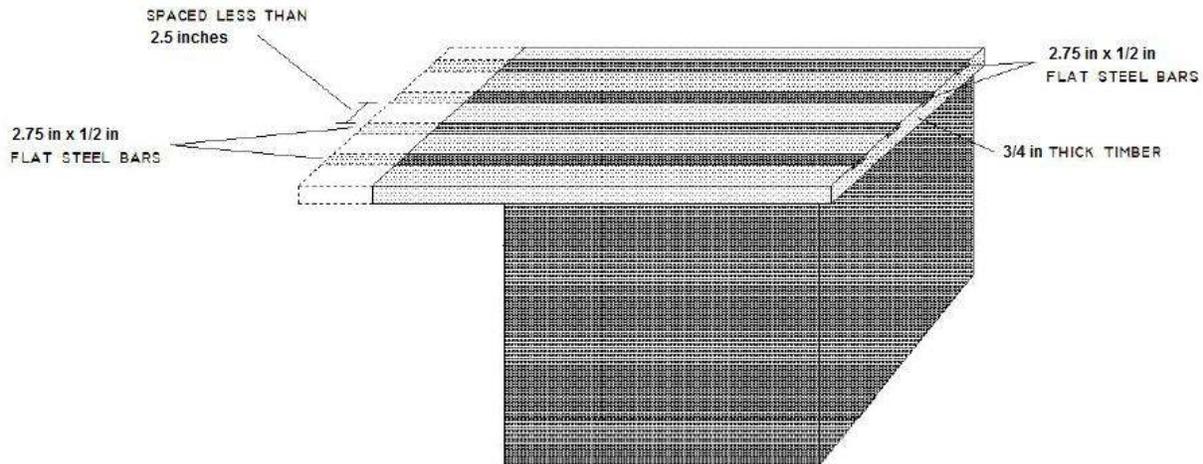


DISHWASHER INSTALLATION

4. Over hang and supporting brackets:

All the overhangs provided for the breakfast bar or any top should be properly supported with brackets. The thumb rule is that any overhang exceeding 12 inches shall require $\frac{1}{2}$ inch thick 2.75 inch wide steel bar placed underneath the top. However, if 1.5 inch thick laminated edges are used then pieces pasted to the top can extend the whole width of the overhang to take some stress placed on the overhangs.

If the overhang is less than 20 inches then the general practice is to provide a support base made up of timber and the brackets placed approximately 20 inches apart. All overhangs exceeding 20 inches should be supported with proper metal legs.



BREAKFAST BAR - SUPPORT DETAILS FOR OVERHANG EXCEEDING 300MM

5. Installation of Back Splashes:

Pompeii Quartz can be used for back splashes application in wet areas, behind the wash basins/sinks and behind cook tops. However, when installing back splashes behind gas cook tops and heat generating appliances.

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 and clean the entire surface.
- A cement sheet is recommended, the back splash pieces should be thoroughly cleaned on the back and on the top, placed in the area to be installed and checked whether the pieces fit properly.
- After the pieces of cladding satisfactorily fit, clean the contact surfaces with acetone or denatured spirits and apply dabs of transparent two part epoxy glue to both the contact surfaces and the cladding locations. 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 bench top and back splash.

6. Cladding Walls:

Pompeii Quartz 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 weight of the product into account and the services of an experienced structural engineer should be sought during the designing and installation phases.

7. Installation of Tiles:

Pompeii Quartz slab and tiles selected for wall / floor applications are 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 fixing methods suitable for the specific applications.

Tiling system varies from location to location and may be installed in a number of ways. It is important for installers to take in to consideration, the following characteristics of the materials that make up the different layers of the tile system and understand how they interact with each other if the complete system has to function successfully.

- Differential movement
- Structural deflections
- Foundation movements
- Thermal movements
- Moisture movements
- Dimensional stability

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

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

Dimensional stability: this refers to 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 with the result that the tiles tend to warp.

The company 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 manufactures.

VI. CARE & MAINTENANCE

1. Bench Tops & Floors

Pompeii Quartz is a high quality solid non porous product that is resistant to scratches, heat, and stain. However, Pompeii Quartz is not heat, stain and scratch proof. Pompeii Quartz requires minimum 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

Pompeii Quartz 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 makers. If any of the above is spilt on the product, wipe off the stained area with any commonly available multi-purpose cleaner or household detergent and then with ordinary water immediately. For more stubborn spills and stains, repeat the procedure several times and use a household scouring pad to

remove the stain. It is possible that some of the stubborn stains may leave a light mark or very slight discoloration on the stones.

The high gloss finish and extremely low moisture absorption of Pompeii Quartz fully eliminates the need for any sealing.

3. Preventing damage to bench tops from heat

Pompeii Quartz is designed and manufactured to withstand moderate heat but ***the product is not heat proof***. The thermal and shock resistance is increased with the increase of the thickness of Pompeii Quartz, a slab with the thickness of 3 cm is more resistant than a 2 cm slab Pompeii Quartz surface. Like any other composite material, Pompeii Quartz may be damaged by a sudden 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 with hot objects and not to expose the surface to open flames or prolonged contact with very hot items. We always recommend using a hot pad or trivet, especially when using cooking units 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 Pompeii Quartz, as it is made up of pure natural quartz. Continued use of kitchen knives on the bench tops could dull the polished surface. Care should be exercised when moving heavy objects and avoid dropping heavy kitchen tools

5. Removing foreign materials

If food, chewing gum, nail-polish, paint or any other foreign matter is found sticking to the top/floor, simply scrape away with a sharp blade or sharp plastic scraper. The metal surface used in scraping the dirt may leave grey metal marks on the surface, and ordinary scouring pads can easily remove them. Wash and rinse the surface as normal way water.

6. Exposure to chemicals and solvents

Pompeii Quartz can be permanently damaged by prolonged exposure to strong chemicals and solvents. It is advisable not to use hydrofluoric acid, any product containing trichlorethane or methylene chloride and paint strippers.

7. Exposure to direct sunlight

Pompeii Quartz 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 on the surfaces.

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 machine. Sand can scratch the Quartz Based Tile floors and the surfaces should be always kept free from dust, sand and soil. Pompeii Quartz 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 Finish

Honed finish surfaces require additional daily maintenance and care than the polished surfaces. The area exposed on a honed finish is more than the polished surface; hence any dirt, markings and scratches would be more obvious on a honed finish surface than on a polished surface. These markings can be removed using non abrasive cleaning products.

10. Advise to installer

It is the duty of the installer to advise customer important aspects of Care and Maintenance Pompeii Quartz products.

IMPORTANT NOTICE FOR BRUSHED MATERIALS

Some colors are available in our BRUSHED finish which offers the soft appearance of a lower sheen compared to the POLISHED finish. The BRUSHED finishes require slightly more maintenance than our polished finished materials.

Since the brushed 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 Brushed finish will develop character and a patina unique to each customer.

SILICA WARNING

Pompeii Quartz is perfectly safe for delivery, storage and use as certified by GREENGUARD for indoor quality and by NSF for safe food contact as per ANSI051.

However, as other stone products, Pompeii Quartz contains crystalline silica (quartz), which could be generated during the processing and fabricating (cutting, polishing, drilling, etc.) Crystalline silica is a material known to the State of California to cause cancer and link to other diseases, such as tuberculosis, chronic obstructive pulmonary disease, and kidney and autoimmune disease if appropriate precautions and protective measures are not properly employed.

Therefore, all fabricators and installers of Pompeii Quartz obligated to comply with all local and other applicable rules, regulations, ordinances, and laws regarding the application, handling, storage, fabrication and disposal of.

Pompeii Quartz strongly recommends fabricators and installers strictly adhere to the requirements of the International Labor Organization (www.ilo.org) and Occupational Safety and Health Administration (www.osha.gov) to control Silica dust exposure and reduce health risks.