

**PRODUCT MANUAL**  
**FOR QUARTZ & RESIN BASED**  
**ENGINEERED COMPOUND STONE**  
**Q-VICOSTONE®**

# **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 Vicostone's Quartz used in this document refers to any Engineered stone in slab, tile or cut to size forms, manufactured, marketed and sold by Vicostone 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 Vicostone or its approved distributors (" the Company") for the purchase of any Vicostone's 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 Vicostone's Quartz.

## **3. General Information**

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

Vicostone's Quartz engineered stone collection is sold all over the world, to over thirty countries in five continents (such as Australia, New Zealand, EU, USA, Canada, South Africa, Singapore, India ...) with brand name and prestige widely known.

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

Vicostone's Quartz can be used in a variety of domestic and commercial 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.

Vicostone's Quartz 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. Vicostone's Quartz has been manufactured using the quality raw materials as specified and recommended by Breton SPA of Italy.

#### **4. Limitations and responsibilities of Vicostone 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 Vicostone's 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.

Vicostone assumes that the designers, fabricators and installers using the Product, 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 Vicostone's 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 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 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 Vicostone's Quartz distributor for accessing the latest version or updates.

## **II. VARIOUS APPLICATION OF VICOSTONE'S QUARTZ:**

### **1. Interior applications:**

Vicostone's 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. Their 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, alkalies, chemicals and solvents
- ✓ Resistant to mildew and mould
- ✓ Immune to freezing and thawing

Vicostone's Quartz when exposed to direct sunlight may result in colour 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 Vicostone's Quartz for use in exterior applications, as Vicostone's Quartz when exposed to direct sunlight may result in colour change and warping.

### III. TECHNICAL SPECIFICATIONS

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

#### 1. Vicostone's Quartz Specifications:

*Vicostone's Quartz slabs sizes:* 3000 x 1200 x 10 or 12 mm; 3000 x 1400 x 20 or 30mm.

*Vicostone's Quartz tiles:* Available in most of the colours in 300 x 300 mm; 400 x 400 mm; 600 x 600 mm, 600 x 400 mm and 600 x 300 mm. The thickness of the Tiles can be: 10 mm, 12 mm, 20 mm or 30 mm. Tiles are calibrated for both dimension and thickness and bevelled around the edges.

#### 2. Vicostone's Quartz colour, surface finish and pattern:

Vicostone's 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.

Vicostone's Quartz – the ultimate in stone technology and sophistication has a colour palette ranging from the subtle beige tones to the vibrant beauty of the luminescent Starlight Colours, which provide you the opportunity to perfect your individual style and decor.

Vicostone's Quartz slab is generally available in the gloss finish; however, honed finish can be supplied against specification request.

#### 3. Vicostone's Quartz colour consistency and tonal characteristics:

Variation in colour may occur from batch to batch of Vicostone's 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, coloured particles. Such imperfections are generally accepted by the industry.

Vicostone's Quartz is a non porous product but very fine micro pores could be present in certain product range and is unavoidable during manufacturing process.

#### 4. Vicostone's Quartz Technical Characteristics

CHARACTERISTICS	TEST METHOD	UNIT OF MEASUREMENT		VICOSTONE'S QUARTZ (Range of values)
Density	ASTM C 97	Kg/dm <sup>3</sup>		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 Vicostone's 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 Vicostone's Quartz sheets, please make sure of the following:

- ✓ Check all the slabs for uniformity of colour and granulometry (aggregate distribution) as slabs vary in colour 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**

Vicostone's 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 Vicostone's Quartz bench top of weight in excess of 55 to 60 kgs 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 1.6mm over a length of 3 metres
- ✓ Remove any nails, screws or sharp edges from the surfaces where the tops would be placed

### **2. Installation of Bench Tops:**

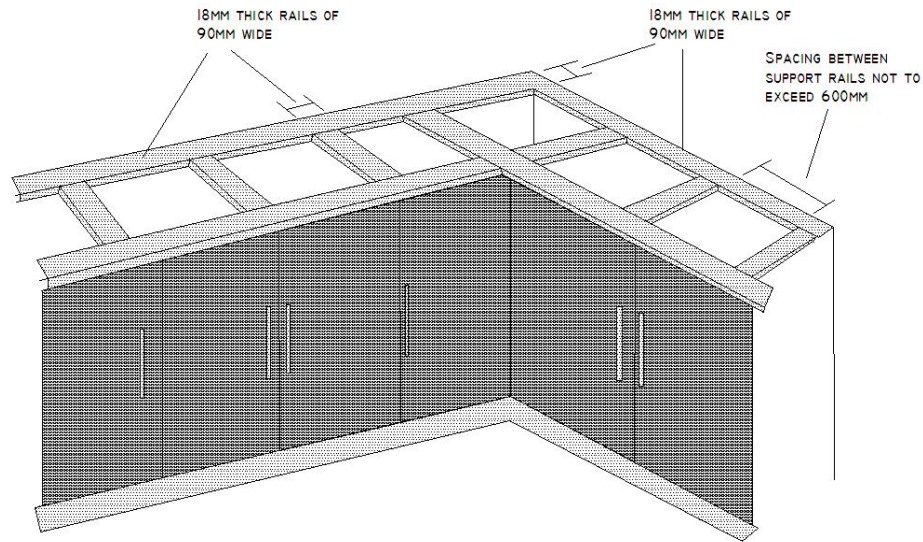
No one kitchen bench top is the same as the other, however, we have given below some guidelines for installing Vicostone's Quartz bench tops. The base supporting the Vicostone's Quartz bench top can be either Complete Perimeter support or Complete underlay support.

- ✓ 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 90mm wide of 18mm thickness. Then support the back of the slab with 90mm-100mm wide rails spaced at regular interval of approximately 600mm apart as shown below:
- ✓ It is important to provide a minimum of 3mm between the edge of the 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 25 cm apart on the back of the top then place the tops gently and level the tops before the glue gets hard.



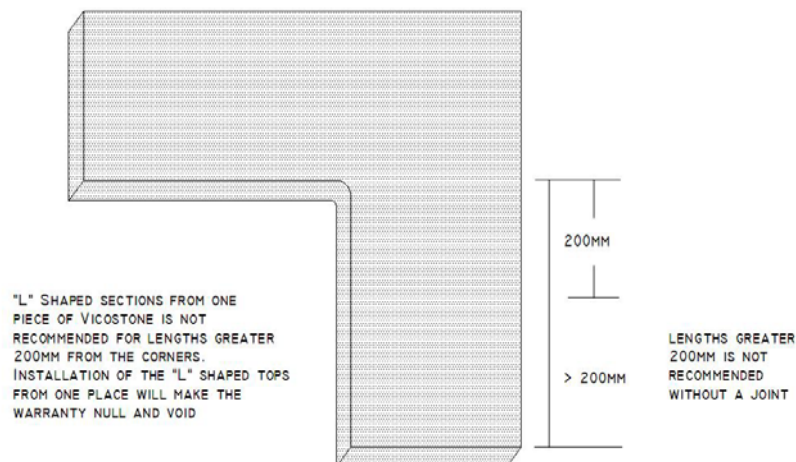


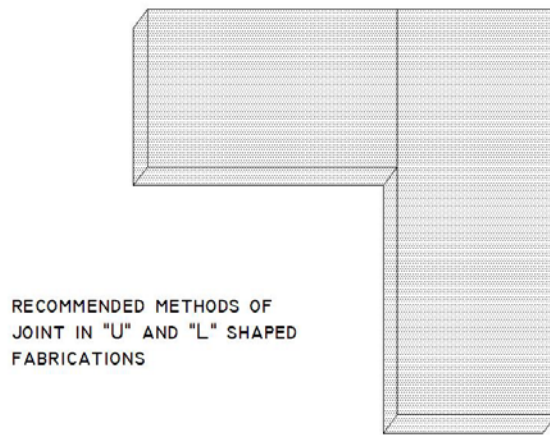
### Complete Full supstrate support

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 18mm.

### 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 15 cm from the joints.
- ✓ Vicostone 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 Vicostone’s Quartz slabs



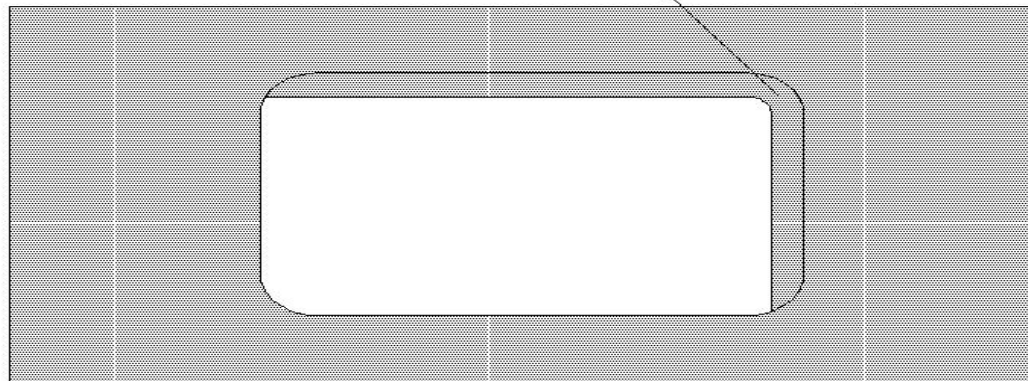


- ✓ All the joints in the tops should be well supported underneath.
- ✓ All the joints should be properly cleaned with acetone or denatured spirit to get rid of all the dust and grime.
- ✓ All the sides of the joints should be grooved or slotted in the middle so that the glue joining the top will be 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 untill 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 Vicostone's 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 freely the wet tools. Never attempt to cut the sink cut outs and cook top cut outs on the top of cabinets with dry cutting tools.

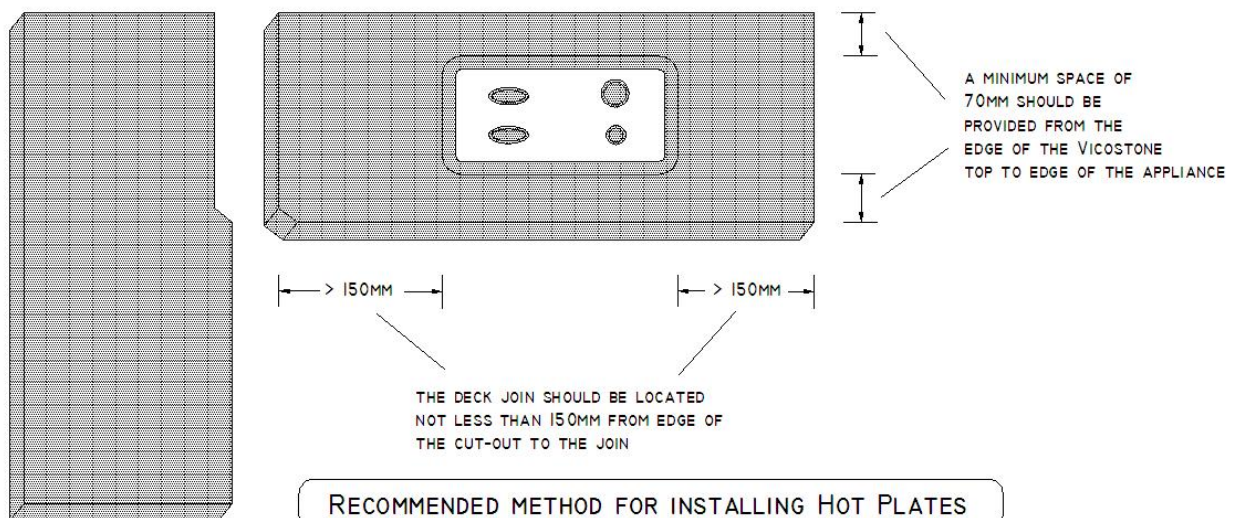
All the cut outs should be cut using only wet cutting tools to avoid generating excess heat to the tops and the corners. The radius of the corner should be around 6mm. When cut out are planned allow extra 3mm between the appliance edges and the top cut out sides. This is essential to accommodate any 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 12MM

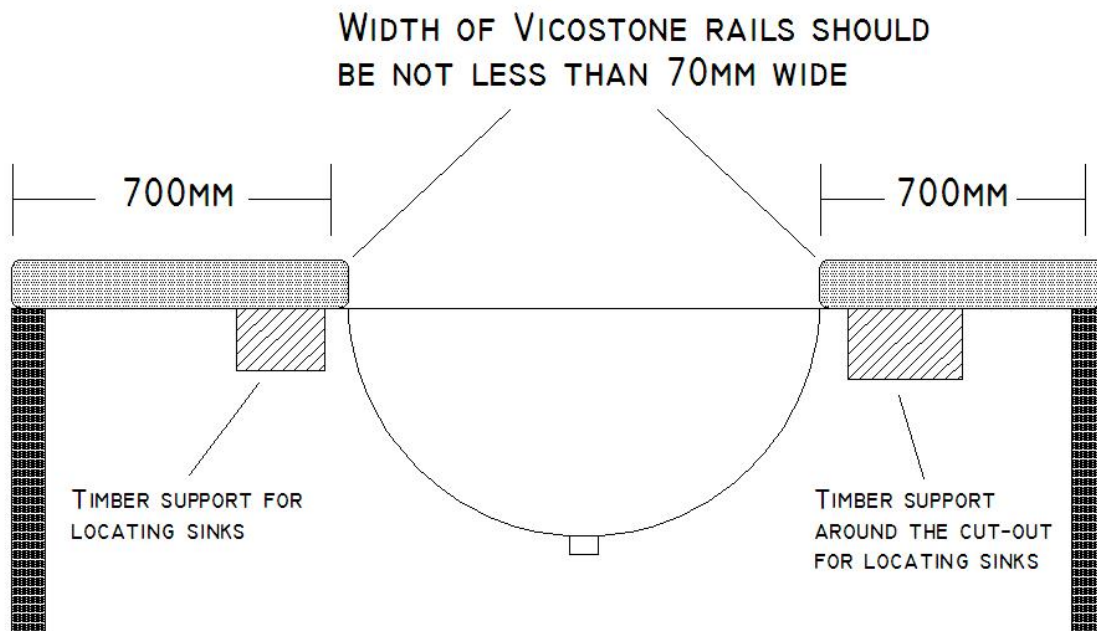


PLANNING CUT-OUTS

- ✓ 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 (eg. Under bench oven). Avoid joins above such heat generating appliances and the warranty becomes null and void if any joints are placed above such appliances.
- ✓ Centre all the appliances in the cut out and make sure that you allow minimum of 3mm space between the inside edges of the appliance and the cut out walls.



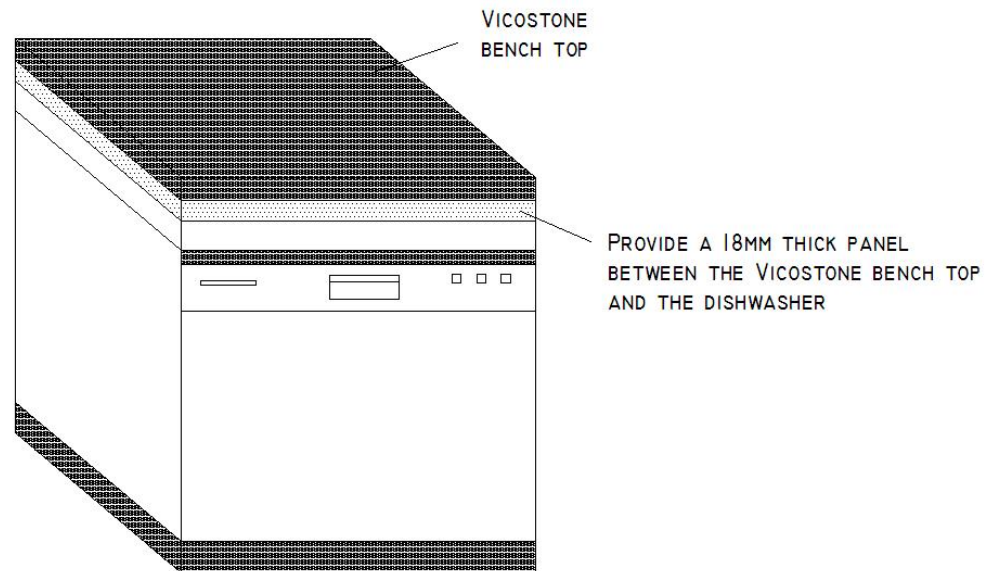
- ✓ Position all the appliances in place and make sure that the seals provided with the appliances are properly placed prior to tightening the fasteners to keep the appliances in place. All the fasteners should be only fingering tight never use force in tightening the fasteners.
- ✓ Any appliances weighing more than 5 kg should be adequately supported by the cabinet frames.



#### INSTALLATION OF UNDER THE COUNTER SINKS

- ✓ All the joints between countertop and the appliance edges can be sealed with a high quality transparent flexible sealant. Clean any excess sealant immediately.
- ✓ Uneven thermal distribution over apart of the bench top 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 and when installing dish washer it is essential to fit a 18mm thick moisture resistant board or marine plywood above the dishwasher in the cabinet.



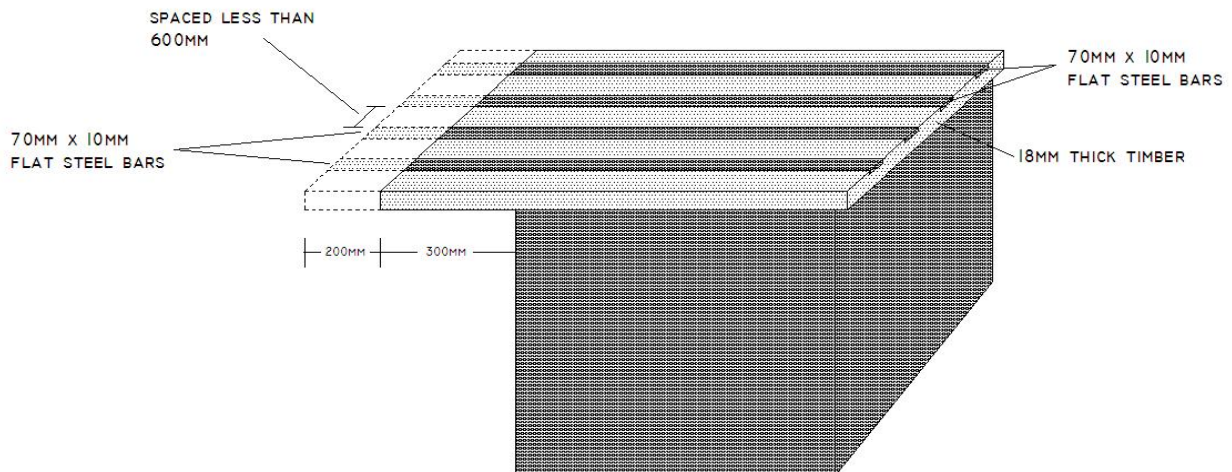


## DISHWASHER INSTALLATION

### 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 300mm shall require 10mm thick 70mm wide steel bar placed underneath the top. However, if 40mm thick laminated edges are used then piece pasted to the top can extend the whole width of the over hang to take some stress placed on the overhangs.

If the overhang is less than 500mm then general practice is to provide a support base made up of timber and the brackets placed approximately 500 mm apart. All overhangs exceeding 500mm should be supported with proper metal legs. The brackets should be fastened to a backer plate, which is secured with the cabinet with screws.



## BREAKFAST BAR - SUPPORT DETAILS FOR OVERHANG EXCEEDING 300MM

## **5. Installation of Splashback:**

Vicostone's Quartz can be used for splashback application in wet areas, behind the wash basins/sinks and behind cook tops. However, when installing splashbacks behind gas cook tops and heat generating appliances, it is important that the installer must follow the Australian & New Zealand standards AS 5601- 2004 Gas Installations and AS NZS 4386.2- 1996 Domestic Kitchen assemblies – Installation.

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 so clean the entire surface.
- ✓ It is not advisable to install splash backs on gyprock boards and any paper lined gypsum product.
- ✓ A fibre cement sheet is recommended, the splash back pieces should be thoroughly cleaned on the back and on the top and 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 and use a flexible silicon based sealant to fill the gap between the bench top and splash backs.

## **6. Cladding Walls:**

Vicostone's 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 mass 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:**

Vicostone's Quartz slab and tiles selected for wall / floor applications 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 fixing methods suitable for the specific applications.

There are no established Vietnamese Standards for adhesive fixing of engineered stone tiles, installers in Vietnam tend to fix the engineered tiles similar to fixing ceramic tiles using adhesives meant for ceramic tiles. Such practices lead to failures in installation.

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 perform 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 the tiles tend to warp.

The adhesive manufactures Ex. Mapei and Laticrete have vast experience in the installation of the 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 Vicostone's Quartz slab and tiles.

The links to their websites given below:

Mapei (Australia): **<http://www.mapei.com>**

Laticrete (Australia): **<http://www.laticrete.com>**

Vicostone's Quartz does not accept any responsibility nor does 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**

Vicostone's Quartz is a high quality solid non porous product that is resistant to scratches, heat, and stain. However, Vicostone's Quartz is not heat, stain and scratch proof. Vicostone's 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**

- ✓ Vicostone's Quartz is high 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 accidentally any of the above is spilt on the top/floor, 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 Vicostone's Quartz fully eliminates the need for any sealing.

### **3. Preventing damage to bench tops from heat**

Vicostone's Quartz is designed and manufactured to withstand moderate heat and the *product is not heat proof*. The Thermal – shock resistance is increased with the increase of the used thickness of Vicostone's Quartz, a slab with the thickness of 30 mm is far more resistant than a 10 mm slab Vicostone's Quartz surface. Like any other composite material, Vicostone's 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 when putting hot objects aside and not to expose the surface to open flames and prolonged contact with very hot pots. 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 the Vicostone's Quartz, as they are 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 accidentally food, chewing gum, nail-polish, paint or any other foreign matter found sticking to the top / floor, simply scrape away the same 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 in the normal way with water.

## **6. Exposure to chemicals and solvents**

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

## **7. Exposure to direct sunlight**

Vicostone's 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. Vicostone's 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 makings 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 Vicostone's Quartz products.