

QUANTUM PORCELAIN



Installation Manual

Handling
Cutting and drilling
Laying
Processing

Installation Manual

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DANGER: SILICA DUST

Exposure to respirable crystalline
silica dust can cause silicosis or cancer

The finished product poses no health hazard



NO UNCONTROLLED DRY CUTTING
WEAR RESPIRATORY PROTECTIVE EQUIPMENT
AND APPROPRIATE PPE

For complete details on safe cutting
refer to wk.com.au/safecutting or aesig.com.au

Important information for stone fabricators

Danger: Silica Dust

Quantum Porcelain and **natural stone** all contain crystalline silica. This material is known to cause cancer and have links to other diseases including silicosis, tuberculosis, pulmonary, kidney and autoimmune disease. These diseases can kill you. Following proper safety instructions eliminates the health risk. It is imperative that the proper safety measures contained in the Quantum Porcelain and Product Manual be followed when fabricating all stone products including natural stone.

Fabricated material poses zero safety risk to anyone.

Safety precautions

We recommend that the stonemason always adhere to good stone working and safety work practices and abide by all the building codes and regulations. In order to prevent any accidents we strongly recommend that the stonemason follow these simple safety procedures.

- Prior to commencing the job the consumer should read The Product manual, The Safety data Sheet. The instruction manuals of adhesives & manuals for operating the various tools.
- The Quantum Zero®, Quantum Porcelain & Natural Stone sheets should be handled with at least two people. When handling these sheets always use industrial protective gloves (AS/NZS 2161) and proper lifting devices and make sure that the lifting straps, lifting clamps and vacuum lifters are free from defects.
- Make sure that the work area is free of all debris and keep the work area clean and tidy.
- When cutting Quantum Zero®, Quantum Porcelain or Natural Stone always wear safety glasses (AS/NZS 1337) and earmuffs (AS/NZS 1269).
Quantum Porcelain & Natural Stone contain silica and the powder (silica powder) when inhaled is injurious to your health. Always cut the stones using wet tools in well-ventilated areas. Respiratory half face reusable Particle Filter Dust Mask to AS/NZS 1715 and 1716 and WHSQ silica document standards should be worn when processing and fabricating all materials.

https://www.worksafe.qld.gov.au/_data/assets/pdf_file/0020/163541/protecting-workers-from-respirable-crystalline-silica-guide.pdf

- Quantum Zero®, Quantum Porcelain or Natural Stone should only be cut using wet tools to avoid inhalation of fine silica dust.
All efforts should be made to avoid cutting, polishing, grinding or drilling of Quantum Zero®, Quantum Porcelain or Natural Stone at the installation premises. If alterations are unavoidable, no uncontrolled dry cutting is allowed, refer to PN12472 (below link) for correct guidelines and details regarding controlled dry cutting procedures

https://www.worksafe.qld.gov.au/_data/assets/pdf_file/0005/172157/installing-stone-benchtops.pdf

We strongly recommend you consult with your local governing WorkSafe office for further details in your State.

WK Stone will not be held responsible for any pollution either directly or indirectly resulting out of processing the stone.

- Waterproof protective apron should be worn when using machines/tools with water Applications
- Always wear proper clothing and never wear loose clothing or loosely hanging jewels for safety reasons
- It is important to wear only steel capped rubber soled industrial safety boots (AS/NZS 2210) when working with Quantum Zero®, Quantum Porcelain or Natural Stone .

Suggested tools

Handling



Parallel and transverse guides



Reinforced trolley

Cutting and drilling

No uncontrolled dry cutting or drilling allowed



Workbench with aluminium profiles



Cutting unit



Cutting-off pliers

- Makita 4101RH wet cutting saw or similar – suitable cutting attachments.
- Diamach LE12 wet polisher or similar – suitable polishing, grinding & drilling attachments.
- Waterjet cutter.
- CNC bridge saw.

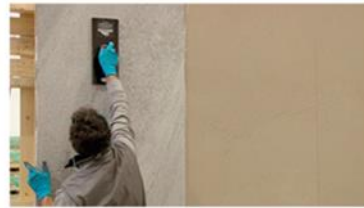
Laying



3mm tile trowel



10mm V-notch trowel



Rubber trowel



Special device for the plate's pulling over



Spacers



Levelling wedges

Handling

For handling the slabs, as well as for cutting and laying, Florim recommends the use of a kit of devices designed especially for large sizes.

To increase rigidity and limit twisting, use a system composed of parallel and transverse guides **(1)** for manual handling of the 1600x3200mm slab.



For a perfect adhesion clean the slab and the suckers with a damp sponge **(2)**.



This device also has suckers that run along the guides and adhere to the ceramic slab. Make sure that a vacuum is created between the device and the surface **(3,4)**.



A single guide device can be used for sizes of 150cm maximum length.



Florim recommends to carry out handling operations of the 1600x3200mm slab with four operators at the same time **(5)**.



Lift the slab along the long side and hang it vertically to the handles of the frame **(6)**.



Set the guides to the trolley needed for carrying the slab **(7)**. For the 1600x3200mm size a suitably reinforced trolley is recommended.



Florim recommends the same procedure for handling the 1200x2400mm and all other sub-sizes, where only two operators are sufficient **(8)**.



Cutting and drilling

No uncontrolled dry cutting or drilling allowed

Cutting

L-shape panels are not recommended & must be avoided. Always fabricate L-shaped pieces with a join on the inside corner(s).

Quantum Porcelain recommends that all cuts are performed and continued through to the end of the slab. Cross-directional plunge cutting is not recommended as it places undue stress on the overlap cuts which may cause corners to pop or crack.

Cut-outs are exempt although these cuts should be performed with the internal corners pre-drilled. A join is required at every change of direction.

Ensure that all joins & seams are supported at all junctions.

All cutouts are considered as L-shapes & must be fully supported by the substrate.

All internal cutouts for power points &/or utilities must have radius corners & must be fully supported.

Power point cutout require a minimum 5-6mm radius internal corners.

Appliance cutouts including sinks, cooktops & fireplaces will require a minimum 15mm radius internal corner. (Larger is recommended)

NB: these suggested radii will lessen the frequency of cracking however cannot guarantee that cracking will not occur from movement in the substrate or expansion from temperature changes. Please refer to our warranty card which states that cracks are not covered by the warranty.

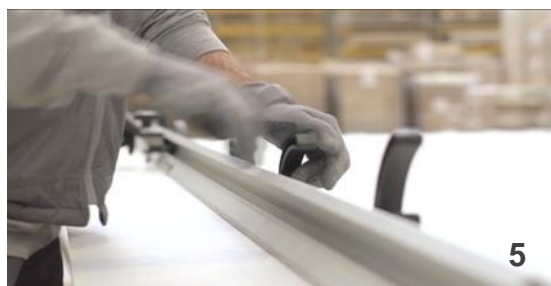


For successful cutting and drilling, lay the slab on a stable surface, flat and not flexible. A workbench with aluminum profiles (1) is recommended for this purpose.

Set the cutting unit (2) on the tile so that the references coincide with the marked lines (3,4) and lock it with the appropriate suckers (5,6).

Wet slab thoroughly along the marked area.

Score one end of the slab for 5-10cm (7) then complete the scoring from one edge to the other, being careful to maintain the same pressure while moving along (8).



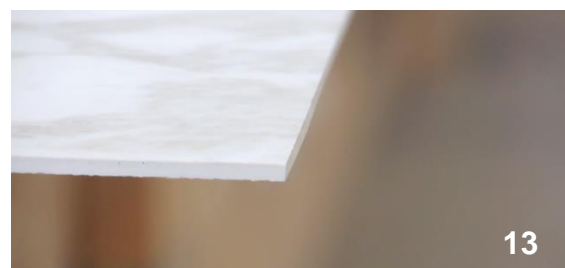
When the cut has been made, move the slab until the incision line sticks out 10cm from the workbench **(9)**, ensuring the slab is wet with ample water.



Start splitting from both sides using appropriate cutting-off pliers **(10,11)**, ensuring the cut is wet and follow the scoring line to complete the cut **(12)**.



Smooth rough edges with a wet diamond polishing pad **(13)**.



Cutting and drilling

Internal cut-outs

Always wear correct protective attire and use wet tools during processing of Quantum Porcelain

To drill internal cut-outs from the slab you need first of all to draw the guide lines **(1)**.

Florim suggests to drill a \varnothing 5/7mm hole at the corners of the rectangle shape, using a wet polishing tool with correct attachment.

While drilling keep both surface and drill bits wet.

Follow the drawn lines using a wet saw and then finish off the edges with a wet diamond polishing pad cleaning up as work progresses.

Use wet polisher and wet saw- suggested on page 3.



Cutting and drilling

Round Holes

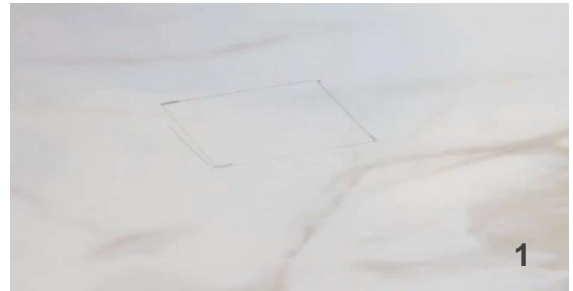
Round holes **(4)** must be made by wet drilling, using suitable wet polisher and diamond core bits.

Start engraving the surface with a 75 degrees point angle **(2)**, then straighten out the core bit avoiding excessive pressure on the slab **(3)**.

Note: Photos show no water for clarity.

*** DO NOT CUT DRY ***

Use correct respirator, goggles, gloves and wet tools during processing of Quantum Porcelain.



Cutting and drilling

Mitred edges

Manual traction devices are available, in order to make a finishing cut at 45° (1-3) and thus enable special applications of the material.

Attached wet saw to traction device and ensure water is flowing during mitre process

Note: Photos show not water for clarity.

*** DO NOT CUT DRY***

Use correct respirator, goggles, gloves and wet tools during processing of Quantum Porcelain.



Laying

Floor installation

Check the laying substrate has no cracks, it is homogeneous and mature, totally clean and flat. Maximum deviation from flatness of 1mm per 2 metres length measured.

First apply the adhesive onto the back of the slab with a 3mm-tile trowel **(1)**. The recommended adhesive is C2TE S1 and it must be spread over in one direction only **(2)**.

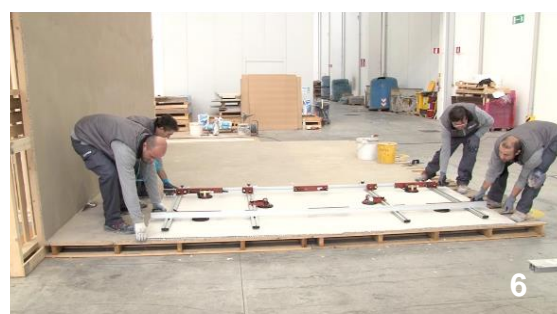
Always follow instructions of the adhesive manufacturer. Most adhesives will not bond to non-absorbent substrates such as melamine without the application of a primer.

At the same time, spread the adhesive onto the floor substrate **(3)** using a 15mm U-notch or a 10mm V-notch trowel and following the same direction as previously applied to the back of the slab **(4)**.



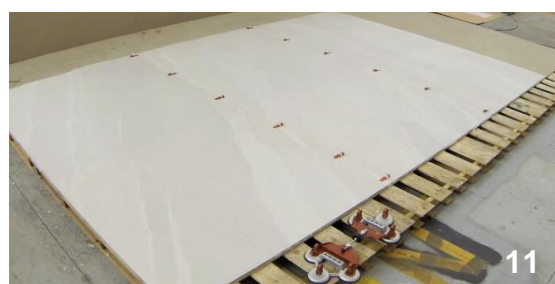
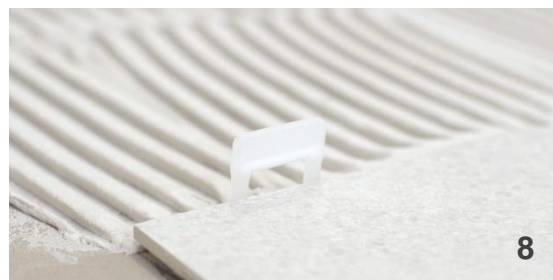
Using the appropriate sucker frame, position the slab on the adhesive bed **(5,6)**, being careful to maintain a minimum joint of 3mm.

Tap the slab with a rubber trowel for complete adhesion **(7)**, ensuring the air is expelled. It is recommended to start from the centre of the slabs and then move towards the edges.



Complete the laying operations using a suitable sealant, while keeping at least a 3mm joint through the use of spacers (8). To make this task easier, use the special device for pulling over the slabs, available on the market (9).

Levelling wedges at each linear metre of the slabs are recommended (10-11).

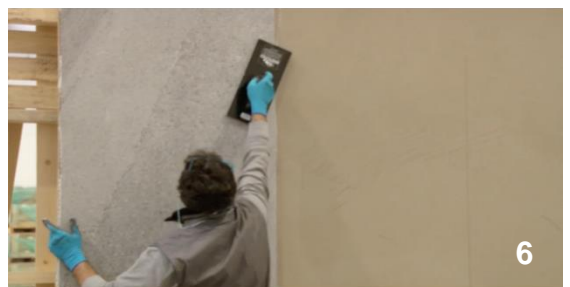


Laying

Wall cladding

For wall cladding, follow the procedures as shown in section (1-6).

Remember to apply the adhesive using a 3mm, 15mm U-notch or a 10mm V-notch trowel, and spread in one direction only (2,3).



Laying

Floor and wall covering

Complete the laying operations using a suitable sealant, while keeping at least a 3mm joint through the use of spacers (7,8). For outdoor laying, keep a 5mm wide joint.

Levelling wedges at each linear metre of the slabs are recommended also for wall cladding (9,10).



Processing

For the processing: marble and granite equipment can be used, whereas the tools shall be specific for porcelain stoneware. Finally, we recommend to use the adequate equipment to handle the slabs **(1)**.



The bridge saw **(2)** can be used for the initial squaring and for the linear cuts. We recommend using a diamond cutting wheel specific for porcelain stoneware. Please ensure that the work top is flat and solid.

Rectified QUANTUM PORCELAIN slabs do not require initial trimming to release tension.

All recommended speeds and instructions listed below are a range of successful settings used during testing of various continuous rim porcelain blades on various bridge saws and are suggested as a guide only. Fine tuning of these settings must be trialed and tested on your individual machine to ensure optimum cutting settings as each machine reacts and performs differently.



Blade RPM: 1,800-2,200 (High RPM's)

Travel Speed: 0.64m/minute-0.73m/minute (approx. 1/3 speed of quartz).

Blade: High quality Continuous Rim porcelain blade at least 350mm diameter to suit your individual bridge saw.

QUANTUM PORCELAIN must be fully supported during cutting process, preferably with a solid timber sheet, or engineered stone slab, instead of the timber slat table which can affect the speed and may cause stuttering (bounce of the porcelain sheet).

Single or double cut methods have been proven successful and are an optional choice depending on your saw and preferences.

Blades should be cleaned by cutting through a sandstone block as per industry.

Water-Jet cutting

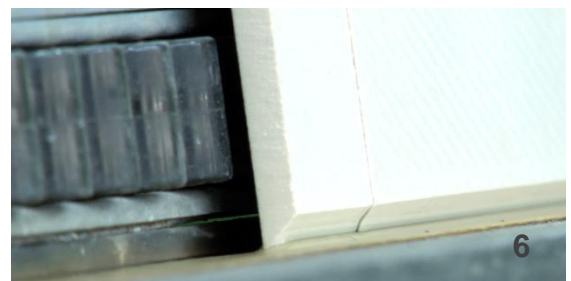
Water-jet cutting **(1,2)** can be used either to carry out both linear cuts and holes **(3)**.

Please note that in case the supporting grid is not optimum, the use of a rigid carton placed between the slab and the grid underneath reduces vibrations, thus facilitating the cutting procedures.



45° edging

During this operation **(4-6)** it is very important to avoid obtaining sharp edges and to stop 1mm away from the top surface.

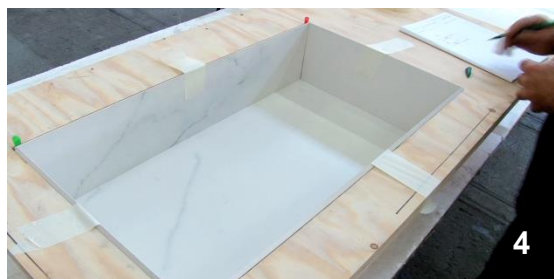


Measurements, control and processing

Use rigid, continuous, humidity resistant supports, such as for example slabs of stone, MDF, compound, rigid high density expanded fiber-reinforced panels, etc **(2-4)**. For what concerns the laying procedure on both floors and walls, glue the slabs using adhesives for porcelain stoneware of C2TES1 type. To install kitchen top, glue the slabs with adequate adhesives (such as polyurethane or epoxy adhesive, for example). Grout the joints and polish manually (using a wet polisher or similar tools).

Although 6mm porcelain sheets have been used in benchtop installations, QUANTUM PORCELAIN does not recommend 6mm for this application, instead we suggest using QUANTUM PORCELAIN 12mm thick sheets.

Please see our Warranty card for further information.

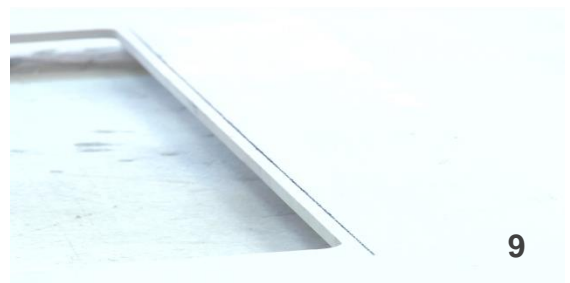


Sink hole



Sink 45° edging

The use of cutting wheels on the surface of the slabs must be totally avoided.



Assembly and joint filling

Apply a protective cellotape in proximity of the points to seal **(1)** in order to avoid every contact between resins and surface.

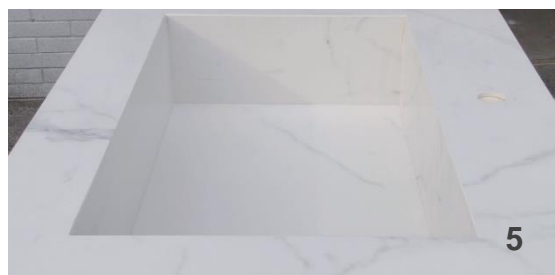


2



Finished product

Built-in elements installed at the same level (such as cooktops) or beneath the level of the slab (such as metal basins or similar items) must be bound to the substructure that must be adequately prepared. Please note: cantilever slabs (compared to the substrate plan) are not allowed, either where the built-in elements are placed or along the external edges (5-7).



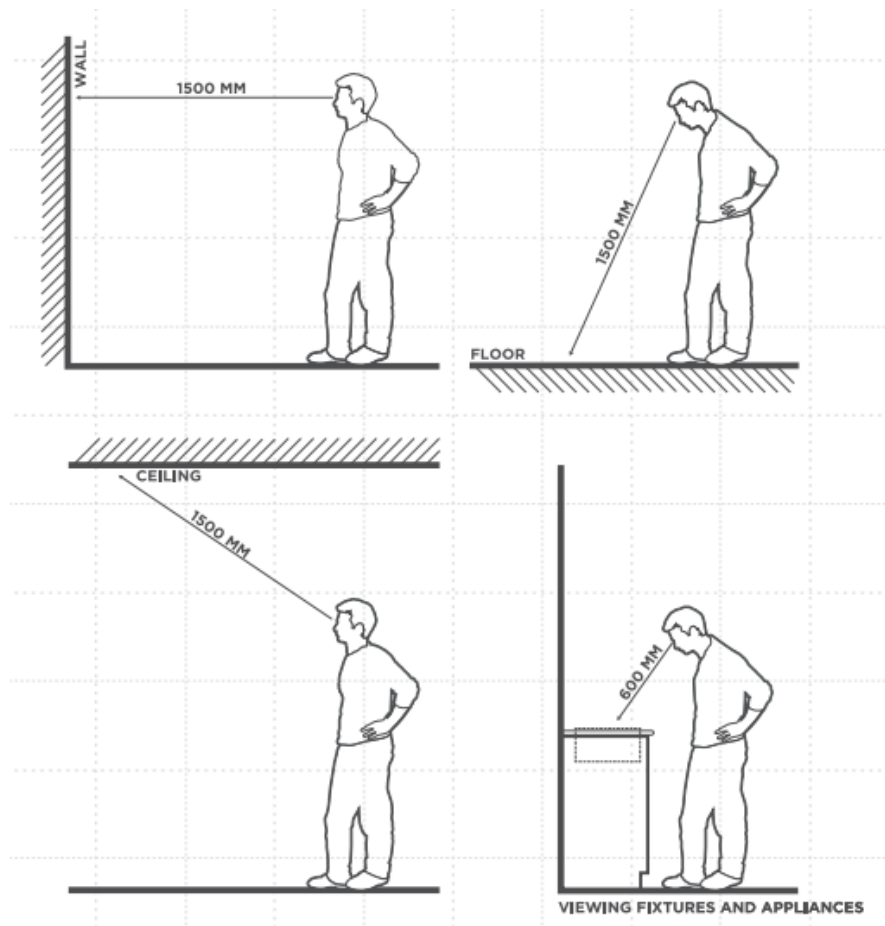
Viewing and inspecting distances

Generally, variations in the surface colour, finish and texture of walls, ceilings, floors and roofs, and variation in glass and similar transparent materials are to be viewed where possible from a normal viewing position. A normal viewing position is looking from a distance of 1.5m or greater (600mm for appliances and fixtures) with the surface or material being illuminated by 'non-critical light'. 'Non-critical light' means the light that strikes the surface is diffused and is not glanced or parallel to that surface.

Slight variations in the colour and finish of materials do not constitute as a defect.

NORMAL VIEWING POSITIONS

Reference: HIA Guide to Kitchen & Bathroom Construction / Australian Standards



Recommendations for processing, care and maintenance

Recommendations / notes before processing

- Before processing the slab, it is necessary to check that the slab does not show any damage and/or visible defects;
- To set the forward speed and the rotation speed of the bridge saw, use wastages or cut pieces;
- During the design and planning phase of the processing, please dimension any hole to keep it at least 80mm away from the edge;
- The holes for basins or flush-mounted equipment must have rounded corners. In case of bridge saw processing, grind the edges with wet diamond polishing pads;
- Bonding to structure: make sure that the adhesive is applied on both the whole surface of the back of the slab and to the whole substrate to obtain a 100% adhesive coverage. The presence of air bubbles between the slab and the surface should be absolutely avoided to prevent possible breakages;
- In case of processing/adjustments on the job site, the operators must wet cut and wear the adequate equipment concerning personal protection (mask, goggles, gloves, etc).

Care and maintenance

- The material is high temperature resistant. However, it is always advisable to use an adequate pan-support whenever hot cookware should be placed on the slab surface;
- Use a chopping board to cut/prepare foods;
- Possible breakages can be repaired with adequate and specific resins. Before repairing, check that the colour of the resins that are used for the reparation operations and the slab colour are the same;
- If stains have maintained contact with the slab surface for a short time, they can be easily removed with the use of a rag and hot water.

Type of detergent according to the type of dirt

Below are some of the substances indicated to remove stains. The instructions are grouped by type of product and do not contain references to specific detergents: however, these features are clearly indicated on the labels of detergents available from most retailers.

Type of dirt	Type of detergent
Grease and oil	Alkaline detergent
Ink	Sodium hypochlorite solution (bleach) or acid detergent
Rust	Acid detergent
Beer, wine, coffee	Sodium hypochlorite solution (bleach) or alkaline detergent
Type marks	Organic solvent (trichloroethylene, thinner)
Ice Cream	Alkaline detergent
Resin	Organic solvente (trichloroethylene, thinner)
Fruit juice	Diluted sodium hypochlorite solution (bleach)
Pen marks (permanent marker)	Organic solvent (acetone, thinner)
Aluminium scratch marks	Acid detergent or abrasive detergent (cream/powder)
Other stains	Abrasive cream detergent

Rinse abundantly with water after the stain remover has been used.