TABQUARTZ

HANDLING, FABRICATION

&

INSTALLATION GUIDELINES

TABQUARTZ
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01. ABOUT TABQUARTZ

TABQUARTZ® is the registered trade mark for the Engineered Quartz Surfaces from TAB. TAB is one of the leading producers of processed granite surfaces in India. TABQUARTZ is a real engineered product made with precision and perfection.

TAB has established the state-of-art manufacturing facility at Hosur, India, producing 300,000 sqm of jumbo slabs of size 3.25 x 1.62 Mtrs, meeting the world class quality standards. The slabs are made in different thicknesses viz. 15, 20 & 30 MM based on Customer needs. It has developed more than 100 varieties of colours and designs, to offer wide range of choice to the end user.

TABQUARTZ has a dedicated R&D Centre having a prototype development equipment and also excellent raw material and product test facilities. Its ergonomic layout, excellent automated manufacturing facility, stringent process controls guarantee, beyond expectations, a range of quality products for world-wide markets.

This manual is published by TABQUARTZ with an intention to provide basic guidelines to fabricators regarding handling, fabricating and installing various end use products like countertops, vanities, kitchen-tops etc. It also provides more information about its features, product quality standards, TABQUARTZ certifications, warranties and general safety precautions. This manual can be a supplement the other normal industry standards and procedures.

TABQUARTZ handles all transactions pertaining to services, tracking, updates, batch samples etc., from its Indian Office so that clients get their materials and services on schedule. Its warehouses in USA also maintain supplementary inventory as an additional back-up measure. Please contact info@tabquartz.com in case any further details are needed.

02. THE PRODUCT AND THE PROCESS

TABQUARTZ is a high gloss, high density ultra-compact quartz surfaces from TAB. Quartz exists naturally in clusters and unlike granite, it does not form huge stone blocks. This makes Quartz stone, unsuitable for use in its natural state as countertops or any other large slab applications, and hence the need to convert quartz aggregate materials into another form i.e. engineered stone, to make it usable for such applications.

Engineered quartz stone is manufactured by Vacuum-Vibro Compaction of aggregate mix of Quartz aggregates (grit & powder), Unsaturated Polyester Resin, Pigments (for coloring) and other chemicals that facilitates resin hardening. Engineered stone slabs can be made in:

- A wide range of colors and patterns
- Different textures - fine or coarse, depending on how it is processed
- Special effect products: Quartz can be combined with glass and other reflective materials for a sparkling finish. They are increasingly popular in high-end applications combining the benefits of granite's durability and non-porous nature of quartz.
- Different thicknesses – 15, 20 & 30 mm depending on the end-use requirements

Since it is an engineered product consistency in appearance can be ensured to the best possible extent, excepting minor batch variation. The slabs can be made in mono-color or in multi-colors almost closer in looks to natural stone, but with much superior characteristics viz. physical, mechanical & chemical properties.

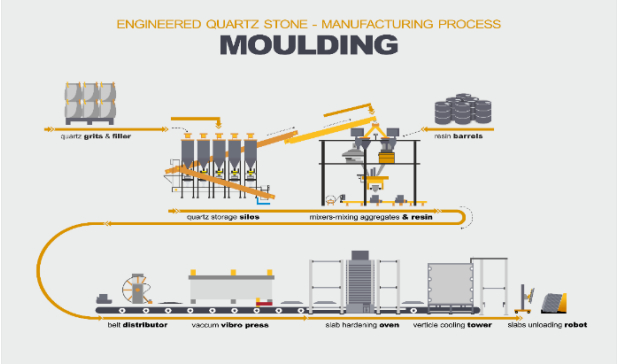
TABQUARTZ slabs are made to Jumbo size with finish dimensions of 3250 x 1650 MM in 15, 20- & 30-MM thicknesses. TABQUARTZ offers slabs in different finishes – Polish, Satin & Honed finishes based on the customer requirement.

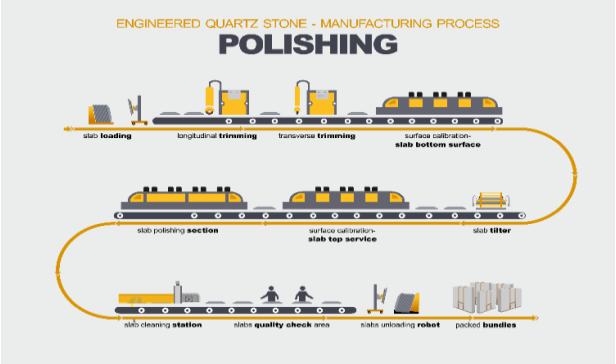
INPUT RAW MATERIALS:

- **Crushed Quartz:** As the name suggests, the major ingredient is Quartz mineral which constitutes approximately 92% ± 1 % by weight of the finished product. This quartz mineral is procured in pre-crushed condition. The quantities and sizes of the quartz grit & powder used for making slabs, vary depending on the final appearance and application of the product
- **Bonding & Curing Chemicals:** Un-saturated polyester resin is used to bind the quartz aggregates and makes it rock-hard similar to the natural stone. To have a controlled reaction of resin, catalyst and accelerator chemicals are used in very small proportions approximately 1% & 0.1% of Resin respectively. In-addition, to have a good binding between resin & siliceous materials, a coupling agent called dyna-silane is used as an additive, approximately 1% of Resin by weight. All the chemicals including resin constitutes the balance i.e. 8% ± 1% of the total weight of the slab.
- **Pigments:** Inorganic & organic pigments (chemically inert) are used to induce different color shades in the product. There are whitening pigments & also color pigments.
- **Miscellaneous materials:** By virtue of its process, other materials such as glass, mirror, shells etc. can be used to give special effects and elegance to the finish product

Special effect products: Quartz can be combined with glass and other reflective materials for a sparkling finish. They are increasingly popular in high-end applications combining the benefits of granite's durability and non-porous nature of quartz.

EQS PRODUCTION PROCESS





RECEIPT & STORAGE: Receipt and inspection of pre-crushed quartz grit & resin is a prerequisite step in the manufacturing of Quartz Surfaces. This stage involves checking the raw materials for quality and suitability. All the accepted raw materials are stored separately to prevent cross-contamination.

SILO LOADING: The pre-crushed quartz of various granularities, are loaded in vertical storage silos to facilitate easy extraction, in the required proportions.

PIGMENT PREPARATION: Dry pigments are prepared off line, as per the formulation and then supplied to production department based on the plan. Pigment preparation is controlled by R&D function to ensure consistency and close control on the color shades

MOULDING:

- Proportioning & Mixing: Different Quartz aggregates are proportioned, depending on the end design pattern, and are transferred to a mixer, where in Resin, pigments & Other chemicals are added to the aggregate mix. The aggregates are thoroughly mixed.
- Blending / Lump Breaking / Homogenization: The output of each mixer is blended in Ring Mixer and passed through Lump Breakers in to a collection hopper
- Distribution & Decoration: The distributor unit picks up the material from hopper and distributes the aggregate mixture uniformly to the shape of the

slab. It also facilitates incorporation certain kind design patterns while distributing. The designs are through and through of the body.

- Pressing: This distributed material is subjected to a high degree of compaction, by applying mechanical pressure and vibration under vacuum conditions. This makes the slab a highly compacted one with resin as a binding agent.
- Hardening / Curing: This highly compacted slab is then cured to enhance the catalysis process for an about 45 to 60 min. During this process, the resin undergoes exothermic catalytic reaction and becomes very hard.
- Cooling: The cured slab from the Oven is transferred in to a vertical or horizontal cooling chamber, where in it is made to cool to room temperature.

The cooled slab becomes, a solid rock like substance, similar to granite slab. This slab is then trimmed, calibrated and polished to glossy finish or to different surface textures as per the end requirement.

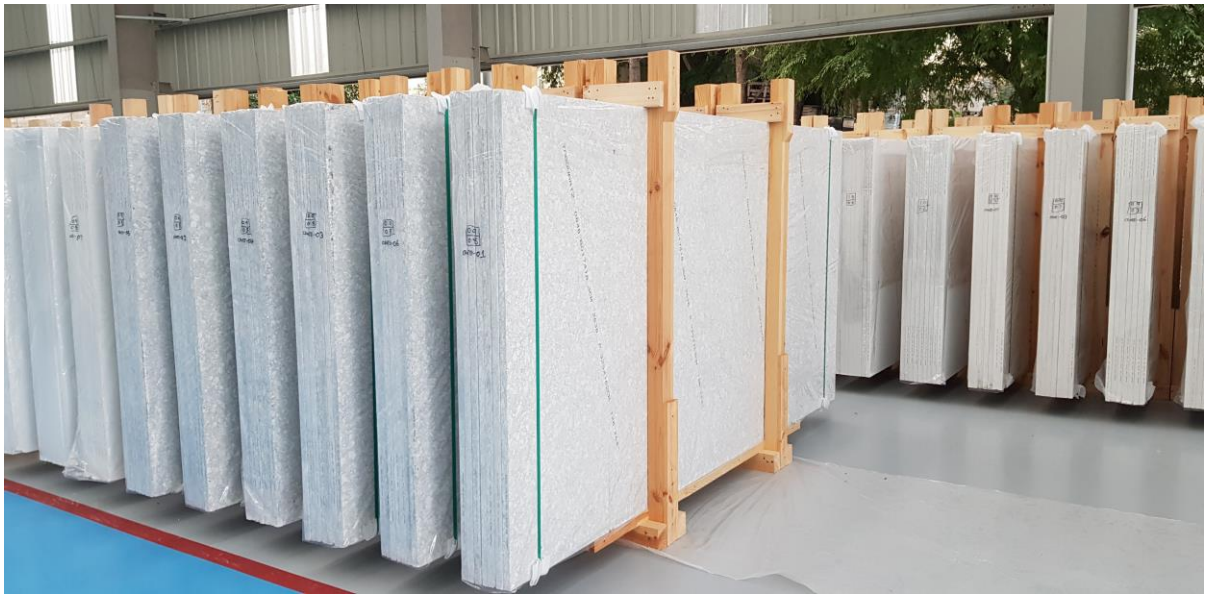
POLISHING: Polishing of EQS slabs is more or less similar to Granite polishing. The steps involved are:

- Calibration: Both top and bottom surfaces are calibrated using diamond abrasives. After calibrating the first surface, the slabs are over-turned and the other face also is calibrated
- Trimming & Beveling: Both long and short edges are trimmed to size and then beveled
- Polishing: The slabs are made to pass under the rotating grinding spindles fitted with series of abrasive fickerts to achieve good polished surface. Normally polishing machine is equipped with multiple polishing head

The end result is the high gloss, high density Quartz slabs of dimensions 3250 x 1620 MM in 15, 20 & 30 thicknesses.

PACKING & DISPATCH: The accepted slabs are stored on special design A Frames and are later packed in wooden crates for dispatch.

Since the slabs are brittle, these are to be kept in vertical position while during storage or during packing. Wooden crates are to be properly designed to keep the slabs vertical and also to see that the polished surface does not get damaged. Suitable care needs to be exercised, while selecting the wood quality and the wood sections, so that the crate can withstand 3 to 4 tons of loads.



03. TECHNICAL CHARACTERISTICS AND QUALITY STANDARDS

Slab Dimensions:

The TABQUARTZ slab comes in two standard dimensions:

Jumbo Slabs : Nominal dimensions 3250 x 1620 mm in 15, 20 and 30 mm thicknesses

Normal Slab : Nominal dimensions 3050 x 1420 mm in 15, 20 and 30 mm thicknesses

Tolerances : The maximum deviation from the nominal value is ± 2%.

Surface Textures:

The TABQUARTZ comes in different textures viz. Polished, Honed, Satin & Brushed finishes. All colours can be supplied in all the above-mentioned textures.

Quality Standards & TABQUARTZ Values:

Characteristics		Testing Method	TABQUARTZ Values
Physical Properties	Density / Specific Gravity	ASTM C97 / EN 14617-1	2.2 - 2.4 gr/cm4
	Water Absorption	ASTM C97 / EN 14617-1	<0.02% by weight
	Dimensional Stability	EN 14617-12	Class A
	Slip Resistance - Wet & Dry	ASTM C1028 / EN 14231	>0.4
	Thermal Shock	ASTM C484 / EN 14617-6	No visual change
	Thermal expansion Coefficient	ASTM C531 / EN 14617 -11	1.8 to 2.0 x 10-5/0C
	Thaw - Frost Resistance	ASTM C1026 / EN 14617-5	No defect

Mechanical Properties	Scratch Resistance	ASTM C241 / EN 101	6 ~ 7 Moh Scale
	Modulus of Rupture	ASTM C99 / EN 14617-2	
	Flexural Strength	ASTM C880 / EN 14617-2	50-70 Mpa
	Ball Impact Strength	ASTM D256 / EN 14617-9, EN 14158	6 - 10 k.Joules
	Compressive Strength	ASTM C170 / EN 14617-15	180-210 Mpa
	Abrasion Resistance	ASTM C501 / EN 14617-4	80-100 MM3
Chemical Properties	Chemical Resistance	ASTM C650 / EN 14617-10	Class C4
	Stain Resistance	ASTM C1378 / EN 14617 - 10	Pass
	Flammability	ASTM E84 / EN 13501-1	Class A
	Fungal & Bacterial Resistance	ASTM G21 & G22	Pass

TABQUARTZ Inspection Standards:

Sl.	Inspection Parameter	Quality Plan	GRADE 1	GRADE 2
1	Porosity	Every Slab	Not allowed	Localized defect to a max of 3-4 locations, but outside the normal working area
2	Grit peel off	Every Slab	Not allowed. If 1 or 2 spots then try rework & regrade	3 or 4 locations, defect size < 3 mm. If possible, rework and regrade
3	Same colour spot	Every Slab	From 8 mm to 14 mm spot depending on grit size, but not very much conspicuous. Max 2 locations	Larger spots. Max 5 locations but Not very much conspicuous

4	Different Colour Spot	Every Slab	From 3 mm to 8 mm spot depending on grit size, Not conspicuous, max 2 locations	Larger spots, Max 3 to 4 locations but Not very much conspicuous
5	Foreign material	Every Slab	Not allowed	> 5 mm in 2 or 3 locations
6	Dry Material	Every Slab	Not allowed	3 or 4 locations, < 5 mm
7	Granule / Vein distribution	Every Slab	Improper distribution can be allowed if not very conspicuous. Should get merged while laid among the batch.	Distribution defects clearly visible
8	Colour Shade	Every Slab	If not prominent can be accepted	If colour shades can be distinctly seen
9	Polishing Marks	Every Slab	Very thin and inconspicuous	Relatively deep scorings beyond re-polish possibility but at 2 or 3 locations
10	Uncalibrated patches	Every Slab	Not allowed within the slab dimensions of 3.25 x 1.62 Mtrs	Up to 50 mm at Corners and along edges allowed
11	Surface Finish / Gloss Value	Every Slab	Gloss value 60± 10	<50. Try rework if thickness permits & regrade
12	Back side deep grooves, grit peel off, uncalibrated patches.	Every Slab	Not more than 1 mm deep (or) shallow patches	Beyond the acceptable levels

15	Total Length & Width	1 in 5 Slabs	Usable length 325 x 162 CM	If effective area is less than 325 x 162. Chargeable as per effective area provided no other defects
16	True colour of the slab	1 in 10 Slabs	Slight batch variation permitted. But within the batch no variation permitted	Relatively a different colour appearance

Dimensional Checks:

1	Thickness	1 in 5 Slabs	Tolerance ±1 MM	> 1 MM but < 3 MM
2	Gloss	1 in 5 Slabs	Polish Finish: Gloss > 50	If values are beyond Grade 1 limits and the thickness of slab does not permit rework.
			Satin Finish - Gloss 12 to 22	
			Hone Finish-Gloss: 12 to 18	
			Brushed Finish - Gloss: 6 to13	
3	Warpage/Bend	1 in 5 Slabs	Longitudinal < 3.0 mm & Transverse < 1.5 mm	Longitudinal < 5mm & Transverse < 3

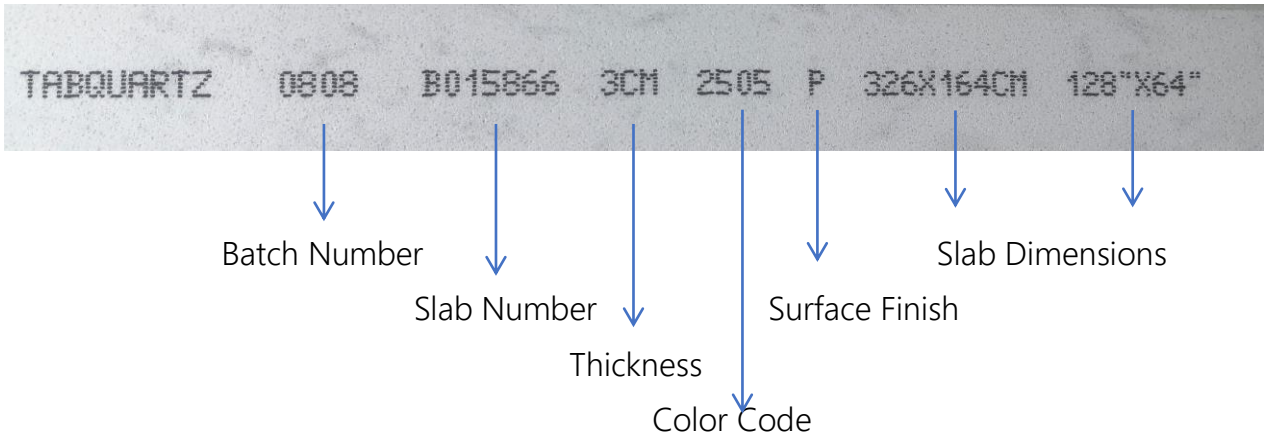
In specific cases of irregularities produced by subsequent mechanical processes, defects that can be seen in natural light in a perpendicular direction 500 MM centimeters from the slab are deemed non-acceptable.

Flatness Check: The flatness is controlled with the slab on a totally flat and horizontal surface and not to check on a rack or in a vertical position. The flatness is measured with an aluminum straight edge. The maximum deviation from the nominal value is < 2.0 mm.

Product Tariff Code: The product is classified with the tariff code: 6914.90.00.90.

Product Labelling: All the slabs are labelled on the sides with details viz. Serial No., Colour Code, Thickness, Finish, Batch No. & Size. The label determines the traceability of the slab and its history throughout the factory production process.

Every Slab will be printed with the following details on the Side and Back



Slab Backside Printing

04. PRODUCT CERTIFICATIONS

TABQUARTZ by TAB has the following accreditation from the following worldwide institutions.

NSF INTERNATIONAL:

NSF International is an independent non-profit organization devoted to safety in public health and environmental protection. NSF, is a worldwide leader, in the development of standards, product certifications, education and risk management for health and public safety. TABQUARTZ has been tested and assessed and approved by NSF under international standard 51 for the different products. Obtaining the NSF certification and thus, the right to use the logo for the certified products, entails, a toxicological evaluation of all the ingredients of all the different products, proficiency testing and successfully passing unannounced audits annually, in all manufacturing sites. To see the list of products that currently have the certificate, visit the NSF website: www.nsf.org.

THE GREEN GUARD GOLD CERTIFICATION:

This programme identifies those products that have been tested to guarantee that their chemical and particle emissions are in line with the strict guidelines for indoor contaminants. Likewise, Greenguard has another certification, Greenguard Gold, which assesses the sensitive nature of schools along with the characteristics of this type of building. This certification includes maximum control of the requirements with regard to chemical product emissions. TABQUARTZ by TAB has been analyzed by Greenguard, proving that it does not emit any type of VOC and thus has achieved the Greenguard Certified.

(Certificate No. 41572-410) and Green guard Gold (Certificate No. 41572-420) Certifications. The certifications of the different TABQUARTZ products can be downloaded from the Green guard webpage: www.greenguard.org

KOSHER CERTIFICATION:

The degree to which a Jewish person will follow the laws of kashrut will often depend on their level of religious observance. Many scholars believe that traditions like keeping **kosher** are **important**, because they connect Jewish people to their sense of identity, their history, and their culture.

ISO CERTIFICATION

Our manufacturing facility is Certified by TUV Nord as per ISO 9001:2015, 14001:2015, 45001:2018. We have management systems in line with the above standards for the Design Development and Manufacture of Engineered Quartz Slabs for Residential and Commercial Projects. All the Certifications are valid till 2022.

ISO 14001 : 2015	Certificate No. 44 104 19392587
ISO 9001 : 2015	Certificate No. 44 100 064225
ISO 45001 : 2018	Certificate No. 44 126 19392587

05. HANDLING AND STORAGE

Handling:

TABQUARTZ slabs must be handled with proper care and safety to prevent damage to the slab nor the equipment. The table below describes the weight per slab and per metre squared.

Slab Size	3250 x 1620 MM			
Slab Thickness	12 MM	15 MM	20 MM	30 MM
Slab Weight - kg	145 – 150 kg	180 – 190 kg	240 – 250 kg	360 – 375 kg
Weight / SqM	27 – 28 kg	34 – 36 kg	46 – 48 kg	68 – 71 kg
Slabs / Crate	20 Slabs	16 Slabs	12 Slabs	8 slabs
Crate Weight	3 Tons	3 Tons	3 Tons	3 Tons

Note: Number of slabs per bundle may change based on the customer requirement / order size

Accessories:

Accessories include Nylon Slings, Spreader Bar, Alligator Clamps, C – Frame, Handle Bars with vacuum cups etc as shown below.

Alligator Clamp for Lifting Single Slab

Scissors Slab Lifter

Pair of Web Slings

Spreader bar for Lifting single slab / Packed Crate

Slab Crate Handler for Container Loading / Destuffing

Usage of Spread Bar and Nylon Slings

'Safety Precautions while Handling Slabs:

- Wear safety gloves while handling slabs as they may have sharp edges along the length & width
- Nylon / Canvas slings should be used for handling single / bundle of slabs. Metallic slings should not be used to handle the material.
- Use right kind of handling equipment based on the equipment rating & weight to be lifted
- Slabs edges are likely to have sharp edges. For longer life of Nylon Slings, it is advisable to use nylon protective covers as recommended by the sling manufacturer.
- Check and mark the load rating capacity on the handling equipment and verify before use
- Handle slabs without causing edge damages

STORAGE:

Use proper slab storage stands for keeping TABQUARTZ slabs. This will prevent damage and unnecessary bends on the slabs. Also use suitable transportation trolley for shifting the slabs from one place to the other.

Trolley for moving Slab Bundles

Slab Frame with back support for Slab Storage

'A' Frame for Slab storage

06. WORKTOP DESIGN CONSIDERATIONS

TABQUARTZ recommends the following generic design guidelines for the Quartz Worktops. Deviation from these recommendations may create difficulty during the fabrication as well during installation and maintenance. Hence it is strongly recommended to the fabricator and end-user to ensure the below mentioned guidelines.

- Needs to ensure that the Fabricator is provided with a proper drawing bearing the exact dimensions (measurements) of the worktop and with a clear indication of corner radii, sectional views of the edges (edge profiles) & the edge finishes (as cut or honed)
- TABQUARTZ does not recommend sharp corners in the worktops for two reasons – one is difficult to fabricate & the other being the fact the sharp corners are prone for quicker crack initiation. The recommended minimum radii are: R10mm for Hob mounting, R20mm for sink mounting, R05mm for cut-outs.
- It is recommended to have minimum width of 50 mm stone all-round the hob or sink cutout and preferably 150 mm nearer to the seams / joints
- Recommended maximum overhang depends on size & thickness of worktop and also on the anticipated end loads. It varies from a min of 50 mm (for 12/15 mm medium size worktops) to a maximum of 700 mm (for 3 cm large worktops).
- A minimum of 3mm edge radius is recommended for Eased honed Edges
- While installation, a minimum clearance of 1 mm needs to be provided along the wall side to accommodate dimensional variations in the worktop due to ambient temperature variations.
- In the case of drainboards, a maximum of 4 mm groove depth & a minimum of 6 mm groove-to-groove pitch is recommended.
- The max depth of the blind mounting holes is limited to 50% of the worktop thickness
- The hob or sink cutout made in the worktop should be sufficiently made oversize (approximately 6 to 8 mm) when compared to the actual size of the hob / sink.

- While installing the worktops sufficient support bars need to be provided below the worktops. 600 mm is the recommended maximum gap between the support bars. Also to ensure that the whole perimeter of the worktop is supported evenly
- Heat resistant silicon glue is recommended to be applied in the worktop clearances with wall & adjoining pieces

07. FABRICATION GUIDELINES

TABQUARTZ is a unique product compared to what is currently available on the market. Due to its chemical composition and controlled production processes, its main distinguishing feature lies in its extraordinary physical properties, such as its hardness, abrasion resistance and consistent dimensional control.

Due to the fact that this surface is so innovative, tools commonly used in stone (Granite & Marble) industry workshops are not suitable for TABQUARTZ. if the specific tools are not used, it may cause edge chippings, burn marks etc. and may affect the material, tool or performance of the machinery.

Usage of unsuitable tools and right process parameters, affects the quality of cutting, grinding, beveling etc. In view of this, all fabricators are requested to use the diamond tools meant for Quartz Surfaces. For any guidance, please contact info@tabquartz.com

IMPORTANT GUIDELINES PRIOR TO STARTING:

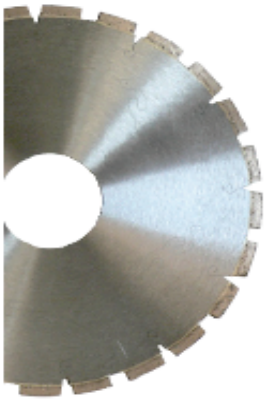
- Trim at least 1 cm on each edges of the TABQUARTZ Slabs.
- Decide correct working sequence: Blank cutting followed by drilling, routing, sink cutting / finishing, possibly in one set-up
- If cutting pieces for facades, flooring or cladding, start by cutting full width or long strips to the required length
- Separate these strips from the rest of the slab and then cut balance format items
- Avoid sharp corners and make a small radius to avoid breakages and also to ensure safety to personnel while handling during installation & usage
- Record the slab data printed on the slab's shorter edge before processing it. The slab no. / batch number marked on the slab identifies the slab and traces it with regard its manufacturing process and the quality information of that particular slab. Furnishing the slab no. / batch no. will make the understanding easier and better.

POINTS TO BE TAKEN CARE: To obtain good quality of fabrication, the following points pertaining to the condition of the machine, needs to be ensured on the machine:

- The cutting table should be solid and robust.
- The table must be perfectly flat and level (the quality is improved using a rubber or wooden surface, to buffer the blade vibrations)
- Ensure that the surface on which the slab is going to be placed, is in good condition. The piece should be perfectly supported and ensure that there are no surface irregularities that may affect proper gripping of the slab.
- The blade must be in good condition (the tool should be within its product life cycle and there should be no surface damage).
- The coolant flow must point directly at the cutting point and not indirectly. Use the maximum flow allowed by the machinery.

Blank Preparation: Blank preparation is normally done on Bridge Saws. Bridge saws can be a basic model or can be a single disc / multi disc, 5-axes cutting centre. Diamond disc cutters are used for cutting.

CNC SAW BLADES
Segmented



CODE	SIZE	CORE	MACHINE	RPM
D200NEY130640B	Ø200 - B22.2	Normal	Bavelloni	2700-3200
ADS01011	Ø210 - B50	Silent	CMS	
ADS00015	Ø210 - B50	Silent		
ADS00017	Ø210 - B50+6H	Silent		
D250LMV301044O	Ø250 - B50	Silent		2400-2700
D500LF16007556	Ø500 - B50+8HØ7/121	Silent		1700
D500LMV6010506	Ø500 - B50+8HØ7/121	Silent		1400
ADS00028	Ø210 - B30+4HØ7/60	Silent	Breton	2400-2800
D250LMV301044R	Ø250 - B50+6HØ7/95	Silent		2400-2700
D250NMV301044i	Ø250 - B30+4HØ9/60	Normal	Intermac	2200-2500
ADS00002	Ø200 - B50+6H	Normal	Denver	2400-2800
EDS00014	Ø305 - B60	Normal	Prussiani	2200-2600
ADS00024	Ø210 -	Silent		2700-3200
ADS00006	Ø200 - B28+3H	Silent	Ravelli	
D300LEY210636R	Ø300 - B35+3H	Silent		

Courtesy: Nicolai Diamant, Italy

The recommended feed rate for a good quality blade for TABQUARTZ slabs can be as follows:

For 1.2 cm slabs : feed rate can be 1.5 – 2.0 Linear mtrs/min

For 2 cm slabs : feed rate can be 1.0 – 1.5 Linear mtrs/min

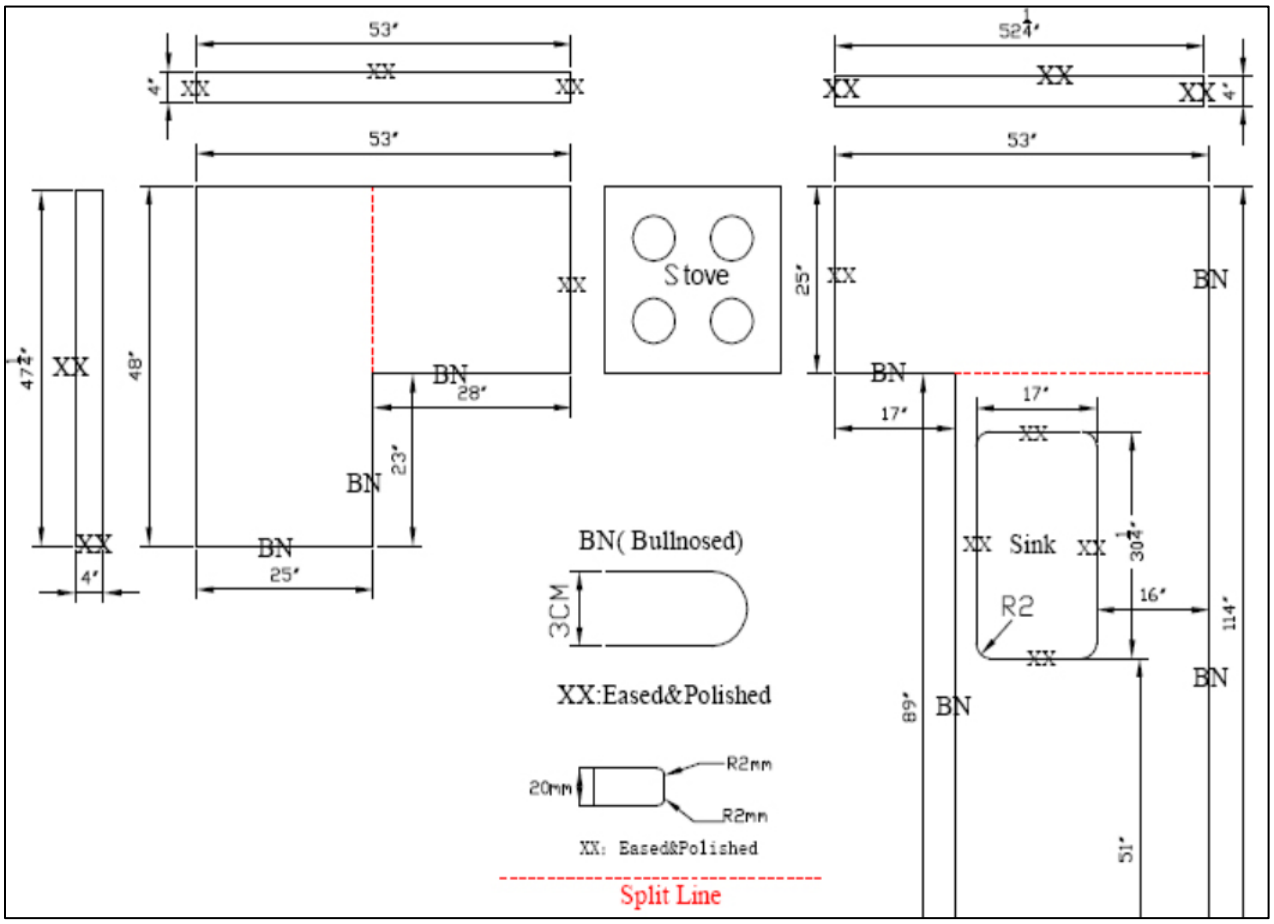
For 3 cm slabs : feed rate can be 0.8 – 1.2 Linear mtrs/min

Note: Depending on the diameter of the blade used, it is necessary to adjust the RPM of the blade. Guideline speeds are indicated in the above table.

GENERIC FABRICATION JOBS:

TABQUARTZ is widely used in all living spaces, especially in kitchens. Kitchen Tops, Islands, Sink counters, windows sills, stair treads etc. are some of the items generally made in large scale.

A typical drawing will be similar to the one shown below:



As indicated in the above, the tops may call for different types of edge profiles. General guidelines for choosing the machine are:

- If the edge is external and straight with no obstructions & also if the edge profiles basically fall under the category of surfaces of generation, then we can

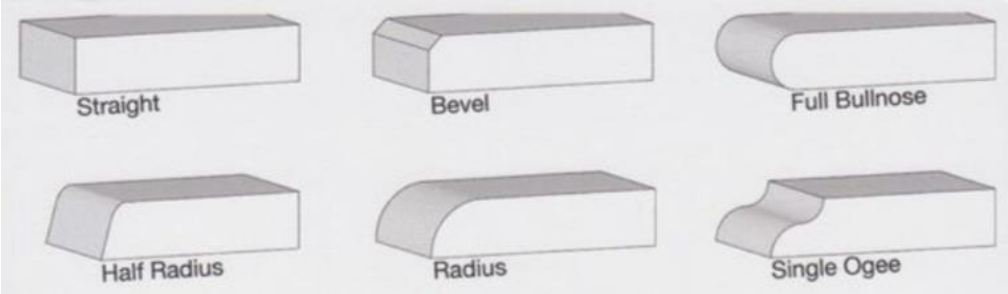
choose straight edge polishing machines like Commandulli Omega 100 for achieving faster rates of production.

- For making internal contours like sink cut-outs etc., such internal features can be done on CNC work centers.
- On CNC work centers, in addition to internal contours cutting & profiling, it can also do very many operations like drilling, pocketing, sink drain grooves, engraving etc.
- All kinds of edge profiles can be made on CNC work centers both for internal and external (both straight & contoured) profile features.

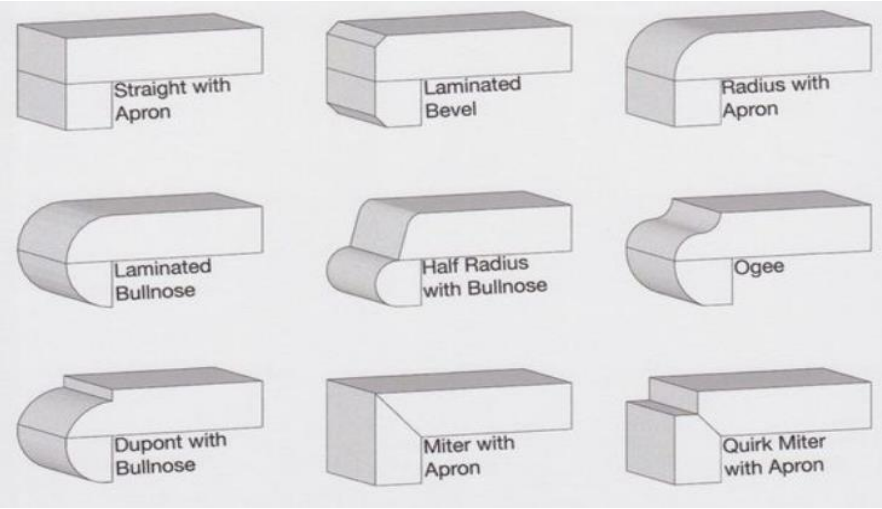
EDGE PROFILES:

Different kinds of edge profiles that are normally made along the inner (or) outer edges are shown here below:

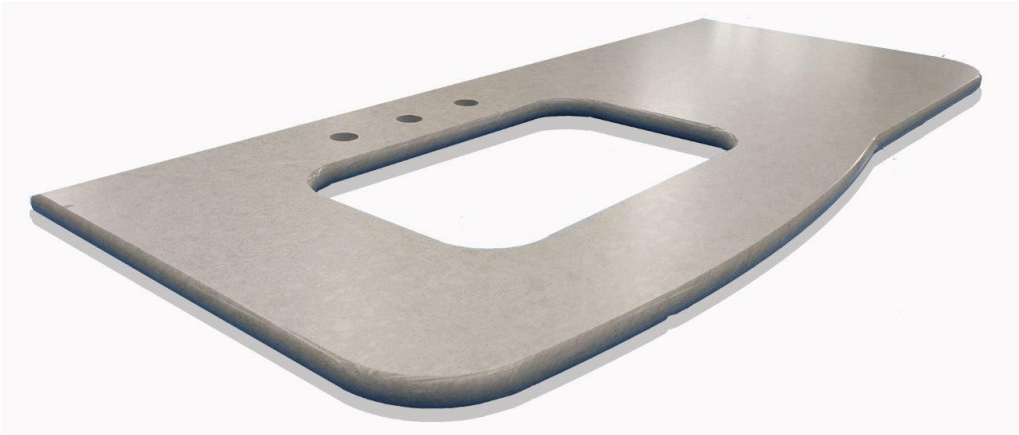
STANDARD EDGE PROFILES:



LAMINATED & PROFILED



GENERAL STEPS INVOLVED IN MAKING A KITCHEN TOP:



- Blank preparation: Cut the blank to the required size on bridge saw machine
- Load on CNC Machine center
- Drill Tap holes. Select the core drill based on the dia. to be drilled

CONTINUOUS RIM CORE BITS
A = 1/2 Gas

CODE	SIZE	RPM	FEED
APF11010	Ø10 x 50 mm	2500-3000	50-100 mm/min
APF11015	Ø15 x 50 mm		
APF11020	Ø20 x 50 mm		
APF11025	Ø25 x 50 mm	2600	
APF11030	Ø30 x 50 mm	2400	40-50 mm/min
APF11032	Ø32 x 50 mm		
APF11035 ☺	Ø35 x 50 mm	2200	
APF11038	Ø38 x 50 mm		
APF11040	Ø40 x 50 mm		
APF11050	Ø50 x 50 mm	2000	
APF11060	Ø60 x 50 mm		40 mm/min

GR ES CR

- Sink Hole making steps:

a) Make a drill at the center of sink to facilitate the entry of router tool

b) Using router tool, rough cut the oval sink

BLUE TWIN FINGER BIT
Segmented - A = 1/2 Gas

CODE	SIZE	RPM	FEED
AFS94011	Ø23 x 30 mm - Z6	4500-5200	250-500 mm/min
AFS90268	Ø23 x 40 mm - Z6		
AFS91074	Ø23 x 50 mm - Z6		

GR ES

c) Use a series of diamond & resin bond profile wheels (normally 7 tools) to obtain polish finish in the sink cut-out. Depending on the edge profile and the arc radius, right type of tools, needs to be selected.

STEP	TYPE	CODE A30 r15
1	Segmented G1	ASS60105
2	Continuous G3	ASF60120
3	Continuous G4	ASF60125
4	Continuous G5	ASF60130
5	ULTraGlo™ G6	CSLA3099935606
6	ULTraGlo™ G7	CSLA3099935607
7	ULTraGlo™ G8	CSLA3099935608

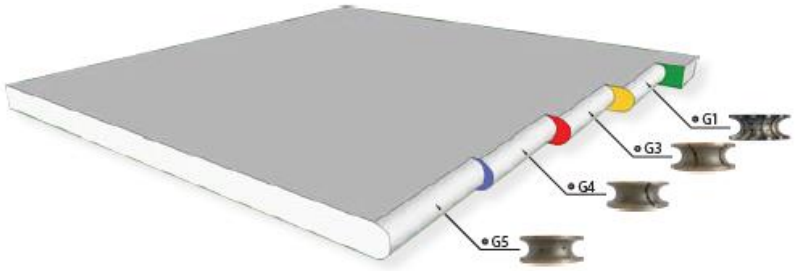
Min Ø 80 mm / Max Ø 120 mm / ULTraGlo™ wheels are Ø60

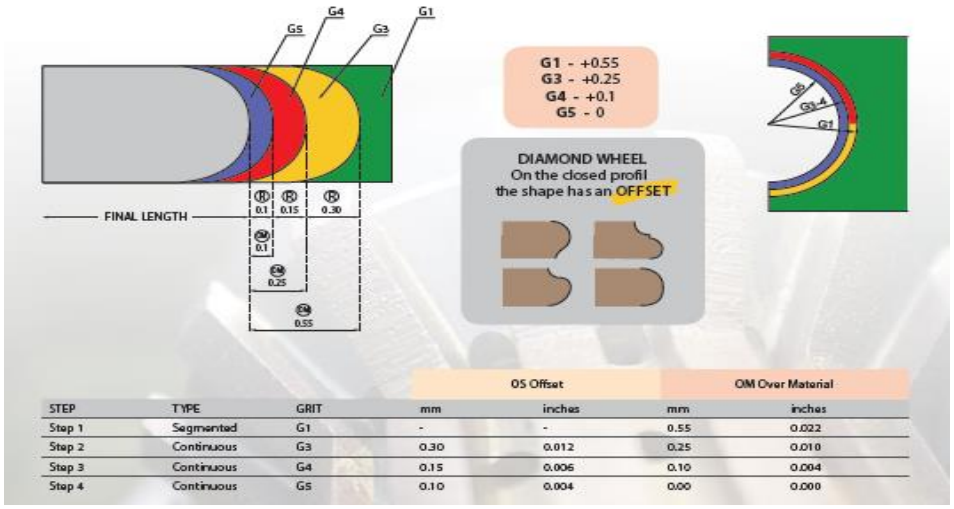
- Outer Edge Profiling (Full bull nose)

NICOLAI DIAMANT

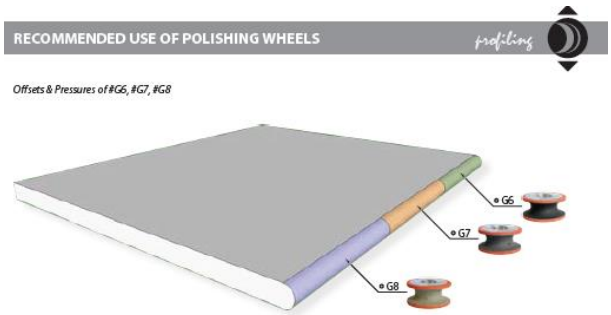
RECOMMENDED USE OF METAL WHEELS *profiling*

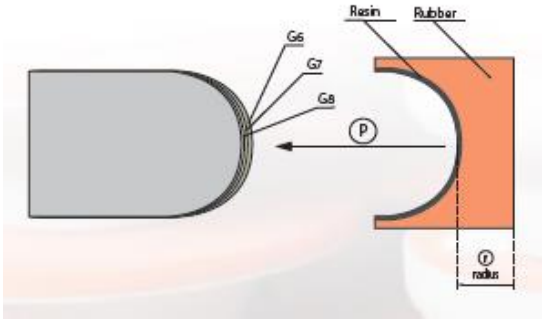
Material REMOVAL RATES OF #G1, #G3, #G4, #G5





			OS Offset		OM Over Material	
STEP	TYPE	GRIT	mm	inches	mm	inches
Step 1	Segmented	G1	-	-	0.55	0.022
Step 2	Continuous	G3	0.30	0.012	0.25	0.010
Step 3	Continuous	G4	0.15	0.006	0.10	0.004
Step 4	Continuous	G5	0.10	0.004	0.00	0.000





			OS Offset		OM Over Material	
STEP	TYPE	GRIT	mm	inches	mm	inches
Step 5	Joylite ULTraGlo	G6	0.00 - 0.05	0.00 - 0.002	0.000	0.000
Step 6	Joylite ULTraGlo	G7	0.00 - 0.05	0.00 - 0.002	0.000	0.000
Step 7	Joylite ULTraGlo	G8	0.00 - 0.05	0.00 - 0.002	0.000	0.000

GENERAL CAUTION WHILE DOING ON CNC MACHINES:

- The pressure of the heads on the edge should be as low as possible to prevent damaging the abrasives.
- All parameters indicated above are guidelines. Depending on the tool size and configuration, they must be adjusted depending on the condition of the machine. The sequence indicated above is an ideal sequence and based on the practical conditions and accuracy of the job, the sequence can be shortened.
- Use the brackets to prevent pieces moving while cutting. AFFIXING

MITRED EDGES

To create edges at a 45 degrees angle, the use of special discs to cut TABQUARTZ is recommended.

LAMINATED EDGES:

To affix the edges, only use glue as recommended by TABQUARTZ, as the characteristics of these glues should confirm to the zero-porosity condition of TABQUARTZ. Contact your TABQUARTZ representative in your nearest CENTER for recommendations on manufacturers of tools, glues, putties and accessories. They will be able to advise you to ensure correct working process.

PACKAGING:

Once the product has been cut, the following steps are recommended to prevent damage to material during transport and handling.

- Clean the worktop or cut surface well to avoid the presence of abrasive particles on the surface that could damage it during transport.
- Completely dry the piece to remove any remnants of water and swarf
- Prepare the pallet or support surface using material cleaning products or moisture that could damage the that cushions vibrations during transport (for example packaging. polyethylene foam). Finally, use plastic covering to prevent movements during the handling and transport.
- Make a frame for the edges of the piece, ensuring that there is a rim of at least 2 cm on each side to prevent contact with other objects during the handling and transport. Prepare the pallet or support surface using material that cushions vibrations during transport (for example polyethylene foam). Finally, use plastic covering to prevent movements during the handling and transport.

GENERIC GUIDELINES FOR INSTALLATION OF WORKTOPS:

The generic guidelines for worktop installation along with back splashes are as follows:

- Firstly, ensure that the installation surface is levelled
- Joint between two Worktop Pieces: mastic or silicon can be used as an adhesive, due to the rigidity, minimal expansion and excellent dimensional stability of TABQUARTZ. First, clean the edges of both surfaces, making sure that they are dry and grease-free.
- For back splash fixing, the worktop should be given a minimum 2 or 3 mm gap from the wall, depending on the irregularities of the wall. The backsplash must be perfectly sealed with silicon both at the contact point with the worktop and the top part of the wall. The sides of the worktop and the backsplash should be sealed with silicon of the same colour.
- Excess silicone can be cleaned by traditional method (water and detergent) or a professional product for such use, available on the market.

GENERIC GUIDELINES FOR INSTALLATION AS FLOORING

- Cleaning: Ensure that the surface where TABQUARTZ is going to be laid is thoroughly cleaned. The surface should be free from all foreign matter and they are clean, dry and dust free.
- Levelling: Ensure that the surface is levelled properly by applying mortar where ever needed. The flatness of the substrate must not exceed 3 mm.
- Consistency of substrate: The base substrate should be extremely consistent (ensuring high tensile strength).
- Roughness and porosity: the base substrate should provide an adequate level of porosity and surface roughness to ensure the adhesion of the product. The greater the roughness of the base substrate the better the adhesion between it and TABQUARTZ.
- Humidity: The humidity of the base substrate must be very low when using synthetic materials, while it should be high when using aqueous materials being careful not to cover the base substrate with water. If necessary, due to residual humidity or the fact that the flooring is placed directly on the ground, a vapor barrier will be applied until it reaches saturation
- Substrate: It is essential to choose the correct adhesive for fixing TABQUARTZ. Since TABQUARTZ is a non-porous material, only chemical drying cements can be used. The cement dries by chemical reaction and it is not affected by contact with air.
- Installation is carried out by a double spread technique (adhesive on the piece and substrate) and light pressure is applied along with the lateral movement of the piece, to ensure that the adhesive completely covers the piece.
- After installing the pieces, they can be adjusted, if the "open time" of the bonding material has not been exceeded.
- Use spacers and leave a joint between the pieces (without filling). Fill in all the corners of the joint preventing the formation of bubbles and spaces.
- Taking into account the expansion coefficient of TABQUARTZ, 3 – 4 MM joints are preferred. The pieces should never be installed without tile-to-tile joints.

- Grouting: Use proper grout to fill the expansion joints provided.

Contact your TAB representative for recommendations on manufacturers of cements and adhesives. They will be able to advise you to ensure correct work.

08. CLEANING AND MAINTENANCE

Due to its very low porosity, the new ultra-compact surface TABQUARTZ by TAB is a surface highly resistant to stains caused both in the home, such as chemicals, making it ideal for use as a kitchen worktop and work surfaces.

For the daily cleaning of TABQUARTZ, the use soft scouring pad is recommended. if this product is not available, the best option is using water and a neutral soap. it is important to rinse with a clean, damp cloth (preferably microfiber) in a good condition.

For colours with a polished finish, it is recommended to dry the surface with a paper or clean cotton cloth after cleaning (to be confirmed).Although TABQUARTZ offers high resistance to aggressive chemicals, such as bleach, acids, etc. however extreme caution is recommended when using these products and ensure that contact time on the surface is as short as possible.

Cleaning stubborn stains

On the other hand, the polished finish also has high resistance to stains, but it may stain when it comes into contact with a highly coloured, aggressive or adhesive substance for more than 24 hours.

In these cases, it is advisable to use more specific products such as: Cream detergents with abrasive particles or solvents (e.g. acetone or universal solvent).

Possible staining agents such as cleaning products recommended in each case are indicated in the table below.

As acidic cleaners, acidic products and de-scalers can be used etc., for alkaline products, basic cleaning product, ammonia, etc.., for solvents, products such as universal solvents, thinner, turpentine, acetone, alcohol, etc. and as oxidant, products such as hydrogen peroxide or diluted bleach.

Precautions:

Avoid using metal scouring pads. Use of this kind of product can lead to loss of the guarantee.

Do not polish

09. OCCUPATIONAL HEALTH AND SAFETY

Company	: TAB
Name of the material	: Engineered Quartz Stone
Uses	: for primarily in work tops and bathrooms, flooring, tiling & facades
Identification of Hazards	: TABQUARTZ finish product is non-hazardous

Safety Caution during Fabrication works:

TABQUARTZ is composed of Quartz (93% by weight) & Unsaturated Polyester Resin (7% by weight). The CAS Reference code for Crystalline Silica (Quartz) is CAS 14808-60-7 / EINECS 238-878-4

Nevertheless, machining / fabrication operations can generate dust containing respirable crystalline silica. Respirable crystalline silica causes damage to the lungs, such as silicosis, after prolonged or repeated exposure by inhalation (Hazard H372). Prolonged inhalation and/or mass of respirable crystalline silica may cause pulmonary fibrosis, pneumoconiosis and silicosis, as well as a worsening of other lung diseases (bronchitis, emphysema, etc.).

To prevent or minimize exposure, it is essential to adopt a series of preventive measures.

- The manufacturer recommends the fabrication and installation of the material using wet production methods. Wet process minimizes the dry dust generation. The dust generated during the manufacturing processes contains respirable crystalline silica (SiO2), which is injurious to health
- Exposure to dust should be monitored and controlled with appropriate control measures such as
    a) providing dust extraction systems in the work area. This system extracts dust from the location, then it filters dust through bag filter system and releases clean air in to atmosphere.

b) Natural and/or forced ventilation systems to ensure air renewal in the workplace
c) Maintain a clean and safe work area by using vacuum and/or water cleaning systems.
d) Avoid sweeping or the use of compressed air for cleaning, as these are methods create dusty environments.
e) Carryout preventive maintenance for all the installations to ensure proper safe working of all equipment

- Do not inhale the dust generated when cutting, shaping or polishing the material.
- Wash your hands and face carefully after handling the product.
- Do not eat, drink or smoke while using it
- Wear respiratory protection for particles (P3).
- First aid: Seek medical advice if you feel unwell.

First Aid Measures:

Special measures are not required for the finished material, but during fabrication process, some immediate measures can be taken in the event of contact with the dust generated during fabrication works, as indicated below:

a) Contact with eyes: Hold eyelids open and flush thoroughly with water.
b) Contact with skin: Wash with soap and water.
c) Contact by inhalation: Take employee to a well-ventilated area. Seek medical advice if you feel unwell.
d) In the event of any fire accident, Dry Chemical Powder (or) CO2 extinguishers are recommended.
e) Personal protective equipment: Necessary PPE needs to be used while at work (or) during fire hazards. The finished product does not present any risk of spillage.

Safety Guidelines for TABQUARTZ handling:

The handling of TABQUARTZ demands special requirements. The user should be responsible for carrying out a risk assessment, in accordance with health and safety regulations.

The following instructions are recommended:

- Use safe handling systems (crane, rack with safety bars, etc.).
- Slings must have good protection and be resistant, as this material has more cutting capacity than natural stone.
- PPEs must be used. Also use proper work clothing. At the end of the day take a wash / shower, if necessary, and put on clean clothes before leaving work
- Establish a specific health monitoring system for the work force
- Wear a safety helmet, safety shoes, safety glasses and anti-cut gloves during handling and storage of TABQUARTZ Slabs / Finish products.
  Warning: the material can be very sharp, especially the broken pieces.
- The slabs must be handled and prepared using anti-cutting gloves and safety goggles.
- Waste material should be handled with care.
- Avoid banging the waste material to reduce its size.
- Precautions for environmental protection. Water-cooled tools must be used to prevent the formation of dusty environments.

Guidelines for Safe Storage & disposal:

- No special conditions are required for safe storage, except storage in a closed and covered space.
- Avoid strong impacts that may cause the material to break.
- Avoid direct flame / fire prone areas. Avoid contact with hot objects / surfaces above 200 ºC
- The packing material scrap, process scrap / rejections need to be disposed as per the local authority guidelines. The TABQUARTZ material scrap can be deposited in inert waste landfill sites. However, permission from local authorities needs to be obtained before disposal of waste scrap generated.

Transportation of material:

The material is not classified as hazardous under transport regulations of land, sea and air

Other Information:

- Please check with TABQUARTZ before using or supplying the material for other applications, other than indoor usage (or) house interiors.
- The information contained in this document, to the best of our knowledge, is true and accurate.

10 WARRANTY AND SUPPORT

TABQUARTZ gives a Residential 15-year Limited Warranty to purchasers of countertops from certified fabricators with respect to the quality of the slab used by the fabricator to manufacture the countertop sold to the end user. Any failure by a Fabricator to comply with the recommended methods of fabrication of countertops from slabs may result in claims by an end user against the Fabricator. The terms and conditions of the Residential Lifetime Warranty and a 10-year Limited Commercial Warranty to the Fabricator and End user are set forth in this manual.

Congratulations & welcome to TABQUARTZ family. TABQUARTZ is a HIGH GLOSS, HIGH DENSITY Quartz Surfaces from TAB. Its rigorous internal quality systems, ensures the supply of highest quality products to its customers. By virtue of its superior and unique characteristic properties, TABQUARTZ need minimal maintenance.

General Guidelines on usage & maintenance:

- Whilst TABQUARTZ is highly scratch and stain resistant but, they are not stain & scratch proof. We recommend any spills be wiped up immediately and never cut directly on your bench top or drag heavy or sharp objects across your bench top.
- Thermal shock can result from heat generating sources such as hot water pipes, cook tops and dishwashers. We recommend that all pipes be thermally insulated and tap holes are sufficiently oversized to avoid heat transfer. Dishwashers can generate significant amounts of heat. It is therefore recommended that moisture resistant MDF board is installed as a heat barrier. Sufficient space should be allowed between the cook top and surrounding quartz bench top edge to minimize heat transfer.
- For every day cleaning use a PH neutral, non-citrus cleaner and wipe with a soft cloth or sponge.

However, TABQUARTZ entrusts the responsibility to the stone fabricator to ensure that slabs are checked thoroughly for any manufacturing defects: spots, colour variances, size,

thickness and straightness of slabs prior to fabrication. Similarly, the stone installer needs to take all precautions and care while handling and installation.

WARRANTY TERMS & CONDITIONS – RESIDENTIAL APPLICATION

TABQUARTZ comes with a 15-year warranty for residential applications. The warranty scope and applicability are as follows:

1. TABQUARTZ offers a limited warranty to the original customer for a period of 15 years from the date of installation.
2. The warranty covers the manufacturing defects but does not cover the subsequent fabrication and installation defects under this warranty
3. The Warranty is limited to: replacing the material (or) refunding the value of the material (or) repairing the material as the case may be that is deemed fit. The warranty does not include fabrication and installation cost of the material. Although TABQUARTZ shall make its best effort to repair or replace with a best possible colour match, it cannot be guaranteed that the replacement item will be an exact colour match to the original.

Warranty does not cover:

- The normal wear & tear and surface scratches of the surface due to routine usage.
- If the product is used for commercial purposes, e.g. purposes other than residential home interior applications. Commercial use includes but is not limited to, use in a store, rental properties, office or any other place of business.
- Any defect or damage to the Product arising from work done by anyone other than TABQUARTZ.
- The fabrication and installation of the Product by other parties other than approved fabricators
- The use of the TABQUARTZ Product for flooring, fire places or in outdoors or in areas where such usage is not recommended
- The discoloration of the Product due to direct sunlight over prolonged periods of exposure either at the dealer site (or) at the fabricator's site (or) at customer site

- Any modification or alteration to the surface of Quartz like hand polish, buffing etc
- Damage to the Product due to prolonged exposure to chemicals or solvents beyond the permissible concentration
- Damage caused by placing hot pots / pans (including electric fry pans) on the surface beyond the allowable contact temperature (kindly refer the code vs. temperature chart in the NSF web site)
- Damages caused by way of dropping / placing very heavy metallic objects (beyond the permissible mechanical characteristics of the product)
- Any defect or damage as a result of the Product not being cleaned in accordance with the TABQUARTZ maintenance guidelines
- This warranty does not cover natural variations in the colour, size, shape and distribution of the pattern of the natural quartz or the natural variations in background tone. These characteristics are inherent and unique characteristics of the product. Colour samples provided to consumers, dealers and fabricators are only representative and not an exact replication of what will be installed in your home.
- Batch variations in colour, pattern or shade of the material are not taken care while laying / fabrication. Quartz surfaces are made from natural materials and some colour variation will occur between batches. Care needs to be exercised while laying.
- Damage caused to Quartz product at the time of installation, due to the failure of other supplementary installation ingredients like adhesives, caulking materials, mechanical accessories, support structures etc.
- Failure to follow any procedures, instructions and recommendations given in the Product Manual provided to the fabricators and/or Customers
- Damage (cracks) caused due to any kind of abuse of the Product or damage caused as a result of mishandling
- Surface level defects due to the bad preparation of substrate

- Edge chipping that arise due to improper handling (or) not using the right fabrication tools or methods. This warranty does not cover mitered edges where the joint is not cut correctly.
- Very small pitting & hair-line cracks in the mirror chips, that are normally unnoticeable on Galaxy type colors on the surface. These are inherent micro level defects, that may occur during the manufacturing process of grinding Mirror or glass studded slabs.
- This warranty does not cover for products that have not been paid for in full
- This limited warranty is non-transferable and does not cover claims made by subsequent owners of your home.
- This warranty does not cover the residences where the owner is not an occupant

TABQUARTZ is not responsible for damage or injury caused in whole or in part by acts of nature, job site conditions, architectural and engineering design, structural movement, acts of vandalism, or accidents.

Warranty claim needs to be lodged online, within 30 days of occurrence, with all the relevant details pertaining to the proof of installation of TABQUARTZ like invoice, sales receipt, date of installation and nature of complaint etc. at warranty@tabquartz.com This will enable us to offer prompt customer service.

For more details contact us at,

TABQUARTZ
(100 % EOU Unit of TIGPL)
SY. No 72/2, 74/1, 2
NH 7 NALLAGANAKOTHAPALLI VILLAGE,
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