

FABRICATION AND INSTALLATION GUIDELINES AND BEST PRACTICE.

GRANITE • MARBLE • ENGINEERED STONE / QUARTZ
SURFACING • SINTERED / PORCELAIN SURFACING



ksa
The Kitchen Specialists
ASSOCIATION

Ver. 1.3 | April 2020



The purpose of this document is to provide industry professionals and consumers with accurate information about how KSA registered fabricators work, and the standards they will be held to in the event of a dispute or mediation.



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1. INTRODUCTION

The beauty and permanence of natural stone and engineered stone countertops are enjoyed by many. The full potential of any installation is realized only when the slab selection, design, fabrication, and installation are completed by qualified and experienced individuals. The purpose of this document is to help guide consumers, project managers, architects and builders through the processes that KSA registered fabricators apply and will be held to when using natural or engineered stone as a countertop surface.

2. STONE MATERIALS

VARIETIES. Many varieties of natural stone have been used successfully for countertop surfaces. However, different types of stone have specific properties that offer advantages or disadvantages in various applications. Besides natural stone, engineered stone is an extremely popular alternative and consideration of this option is essential in a document such as this. The following is a brief overview of the common varieties of stone used as countertops.



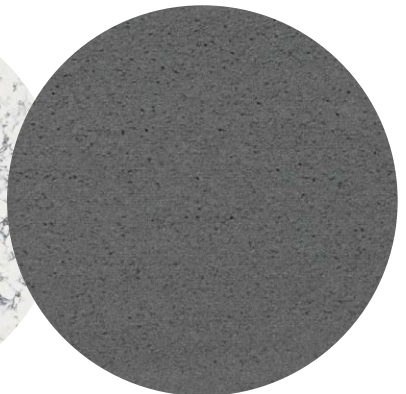
GRANITE



MARBLE



**ENGINEERED/
QUARTZ**



**PORCELAIN/
SINTERED**

GRANITES remain an extremely popular option in the natural stone category used in countertop applications today. Whatever the name, these stones are the hardest and offer high levels of resistance to abrasion and scratching. The primary minerals in granite are resistant to almost all chemicals commonly found in a home. However, there may be trace minerals present in some granites and granite-like stones that are vulnerable to some acids.



MARBLE is traditionally prized for its aesthetic appeal, accentuated by distinct veining and often bold colours. They are relatively softer than granite. Marbles can be scratched by kitchen utensils and etched by chemical attack. They are damaged by exposure to acidic solutions such as lemon juice, tomatoes, vinegar, etc. The use of inappropriate cleaning agents may also trigger acidic attack. Marble countertops are often honed or acid-washed on their upper surfaces and then sealed prior to installation in a kitchen. This process diminishes the effect of acidic attack, which would typically reduce a polished upper surface to what would appear to be a honed or acid-washed surface in the affected area. However, signs of etching could still be visible.

Marbles have been used as countertops in traditional Italian kitchens for centuries, and any subsequent scratches or mild staining was embraced as part of their natural patina. However; your stone dealer may not recommend marble for use in kitchens. It remains a very personal choice. Whatever material you might use for your countertops, it would be wise to use cutting boards, trivets and other protective measures. Use only non-abrasive products when cleaning marble.

Marble surfaces in a kitchen or bathroom application need to be sealed on installation and resealed from time to time, during their lifetime. Some marbles have strong veining which adds to their aesthetic appeal. However, the veining is a potential weak spot that can be susceptible to cracking on impact or if carcass support is inadequate.



ENGINEERED STONE / QUARTZ SURFACING is a man-made product comprising of natural materials (crystal quartz, siliceous sands, and crushed granite), resin, pigments and accessory fractions such as coloured glass and mirror chips. The product has been specifically made for the kitchen surfacing application. It is manufactured in slab form by a process that heats and vibro-compacts the materials, pigments and resins together forming a uniform, impervious surface. Top quality Engineered stone consists of about 93% quartz and 7% resin and must be quartz based. Be careful of marble based engineered stones as they look and feel identical to quartz-based materials but are not in any way heat resistant, scratch or chip resistant. Quality engineered stone/ quartz surfacing is highly durable but not indestructible.

When correctly manufactured it is virtually non-porous which means it does not require sealing. The material can be damaged by excessive heat, so using heating pads or a trivet at all times is vital. Use the recommended cleaning products to maintain the natural appearance of the material.

Knowing the quality of the engineered material you purchase is vital as there is a wide variance in the quality of materials available on the market. Make sure the Engineered Stone you choose has the proper warranties in place. We would refer you to the KSA's advisory notice on engineered stone (*Annexure A of this document*).



PORCELAIN OR SINTERED SURFACING is made up of a combination of silica, quartz and feldspars. Clay can be added to give the product a little more elasticity. Other minerals are used to add pigment. The mineral powder is then combined with water to create a compact. This is then made dense through the exertion of pressure. The product is then fired. The product is made from 100% natural materials. No resins or hydrocarbons are used to bind the minerals. A proper substrate or support method would have to be discussed between your cabinet maker and countertop installer as this influences the warrantee of the product. It is important to note that if the support substrate is not level this could lead to the material cracking.



WHITE MATERIALS – All materials mentioned above will be more prone to markings when ordered in White. Some mark rather than stain and the marks can be removed if treated speedily with the right cleaning material.

HONED, CONCRETE, LEATHERED, RIVER WASHED, ANTIQUE FINISHES – These finishes are extremely popular and fashionable. This finish does however make materials slightly more prone to scratching and stubborn marking and may require more rigorous cleaning than polished surfaces.

OUTDOOR INSTALLATIONS – Although natural stones like Granite, Marble, Slate and Sandstone have always been favourites to install outdoors, these materials could sometimes get damaged due to weather conditions. Please consult with your stone fabricator for advice before settling on a design and material. Engineered Stones surfaces are typically not considered suitable for outdoor applications. Sintered Porcelains are great for outdoor use.

3. COMMUNICATING WITH YOUR CONTRACTOR & CLIENT

DOCUMENTATION. As dictated by standard practices of good business, all communication **MUST** be documented in writing. While WhatsApp is accepted as a legal form of communication it does not facilitate a clear method of communication or the signing off of documents in a manner that assists mediation should it be needed.

All natural stones are unique. Some have pits, fissures, cracks, corrosive minerals, or other features that you may find objectionable. These should be acknowledged and pointed out to you when samples and/or slabs are being viewed. The client should always try and view the exact slabs to be installed on the project prior to them being cut, and a note made of the slab numbers. This unique reference firstly indicates the block number, and then the slab number. You need to be aware that some of the unique features of a slab may become more or less noticeable when the position (vertical or horizontal) of the slab is changed, or when the lighting intensity is changed. If you make your stone selection from a sample and do not view the slab it cannot be guaranteed that the pattern and colour will totally match the sample.

PAYMENT. Each fabricator will have their own payment terms and conditions as part of their contract. It is customary practice in the industry to require a deposit of 50%. This can be followed

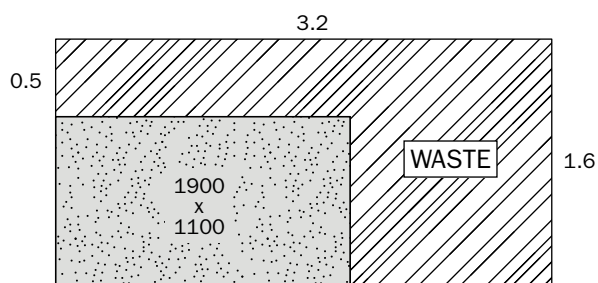
by a final payment or progress payments. The KSA holding account is available at no charge to the customer for payments should the client be nervous about handing over funds directly to the fabricator. Information about the Holding account and how it works can be found on the KSA website www.ksa.co.za

YOU AND YOUR SUBCONTRACTOR'S RESPONSIBILITIES. Your fabricator is not responsible for any cabinetry installations, plumbing or electricals, etc. These are required to be completed by you as the client, or by subcontractors coordinated by you. Your cabinet-maker (NOT your stone contractor) is responsible for any changes to the cabinetry to accommodate kitchen sinks or bathroom vanity bowls. If the cabinetry on which the stone is to be supported does not appear stable or level, the fabricator has the right to refuse installation, without penalties, until this has been rectified. It is at the fabricator's discretion as to whether they wish to charge for repeat site visits and a delayed installation.

All stone surfaces are heavy! Please have a clear path from your driveway to your kitchen so that the stone installation team can navigate through your home easily. Please have walkways free of clutter. If you have existing countertops, please arrange for them to be removed BEFORE installation and make sure that your installation date does not conflict with other work being done in your home (wood floor finishing, tile installation, other tradesmen, etc.).

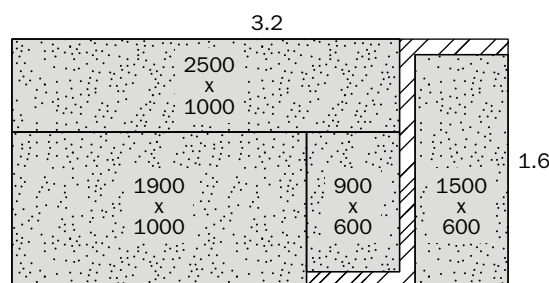
TEMPLATE JOB SHEETS effectively communicate exact cutting information to you. The Template Job Sheet is a detailed document that will identify all aspects of the finished product installation. These drawings are prepared by your fabricator, showing the layout of the stone pieces, location and size of all joints, and details clarifying all corner and edge details. Most fabricators produce full size templates that are highly detailed. It is absolutely vital that you review and approve this document prior to the start of countertop fabrication. This is the time to ask questions about joint positions, sink and HOB cutouts, etc.

STONE SLAB LAYOUT. When working with highly variegated materials, insist that you participate in the layout of the actual stone slabs. **This is very important and highly recommended so that you can fully understand what can or cannot be done.** Bear in mind that pricing may change if you decide to have the stone cut in a specific way that causes unnecessary waste. Ask your fabricator about slab maximization. Slabs can be used and cut in various ways to get more work surface out of one slab if you are on a budget.



Slab = 5.12m²

ORDER
1 x 1900 x 1100
= 2.09m²
= ±59% waste
= Poor value for money



Slab = 5.12m²

ORDER
1 x 1900 x 1000, 1 x 2500 x 600, 1 x 900 x 600, 1 x 1500 x 600
= 4.84m²
= ±5% waste
= Great value for money

MAXIMISING SLAB USAGE.

When ordering your stone, make sure you consult with your designer and stone sales rep and discuss small changes in order to maximise your slab usage. See example of both poor and good slab usage in order to maximise value for money.

SIGN OFF. Once the work is complete it is vital someone is on site to sign off the job. The stone installation should be signed off separately from the rest of the work. Failure to do this compromise both the fabricator and the client. Should you not be able to be on site to sign off the job you should do so when you get home and email the signed documentation to the fabricator. If your stone supplier has provided you with a warranty document this too should be signed and submitted immediately. Reference can be made to the KSA's sign off and care and maintenance documents available on their web site.

4. CABINET AND SUBSTRATE REQUIREMENTS

Cabinetry and any trim or side-panels that affect the overall size of the stone countertops must be permanently installed in their final position prior to templating for countertops. This is a vital “milestone” in the process, and templates should not be taken until this is achieved. Failure to ensure this vital step is achieved could potentially compromise your entire countertop installation.

MEASUREMENT TOLERANCES. When templates are taken, top surfaces of the cabinetry must be checked to be within 3mm of flat and level when measured across a distance of 3m. Wall surfaces to receive stone splash-backs must be plumb and within 3mm of a true plane when measured across a distance of 3m. When cabinets are not within these tolerances, you (or your Authorized Representative), will be asked for permission to proceed with the installation. Installing cabinetry outside of these tolerances will require excessive shim spacers and wide regions of filler material. Any necessary aesthetic improvements to conceal this condition (e.g., additional wood trim) will be your responsibility.

SUB-TOPS. Fragile stone varieties may require a full sub-top to support the stone. Generally, sound varieties of granites, marbles and Quartz Surfaces can be used in thicknesses of 20mm or greater without the use of a sub-top. However, the presence of aesthetically pleasing but unsound veins, cracks, or excessive fissuring will require the use of a sub-top, regardless of thickness. In line with growing international trends, Quartz and Porcelain surfaces are often used in thinner gauges such as 12 or 13mm and these require the use of a subsurface to increase the support required to ensure the surface is practically durable and strong. The inclusion of a subsurface is easily achieved at minimum additional cost. Appropriate materials for sub-surfaces are marine-grade plywood, exterior-grade plywood or waterproofed medium-density particle board. Excessive weight requirements, like that of a heavy cast-iron sink, may require the use of either a sub-top or auxiliary framing to carry the weight of the sink and its contents. Water weighs around 1kg per litre. Some of the larger sinks can easily hold 25 liters or more. That's an additional 25kg's (or more) hanging under your counter!

END PANELS, AND HARDWARE must be installed before the templates are taken. The overhang of the top beyond the carcass should be confirmed between the client, cabinet maker and fabricator if the doors are not fitted at the time template taking. Many cabinet makers don't like to fit the cupboard doors until after the tops have been fitted to avoid them getting damaged in the process. Upper cabinets are usually required prior to installation if a full height wall-cladding is to be installed. If not, then it is best to position them after the stone installation.

5. TEMPLATES

CABINET COMPONENTS. Field measurements are taken once all cabinets have been installed in their permanent positions. The following related components must be available to the Technician at the time of measurement (templating). If these items are not physically on site the fabricator cannot be held accountable should the cutout be inaccurate:

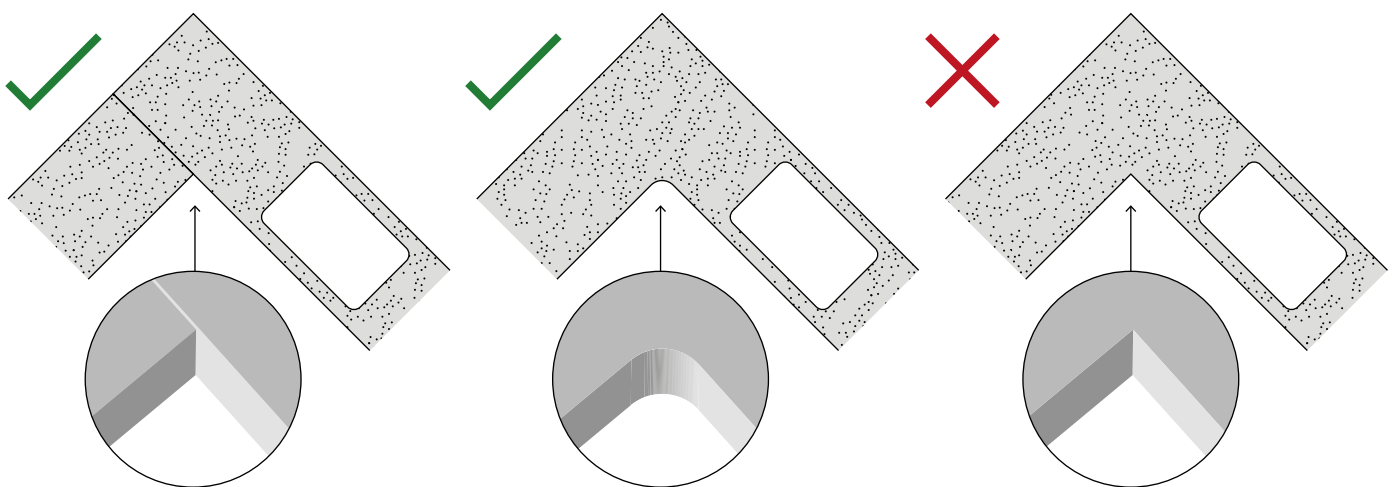
- End Panels
- Cabinet Hardware
- Sinks (and Manufacturer-supplied templates)
- Plumbing Fixtures
- Hobs
- Extractors (when full-height splash is required)
- Electrical Outlets (roughed in)
- Refrigerators (in some cases)

6. DESIGN CONSIDERATIONS

JOINT LAYOUT. The position of the countertop joints is extremely important to the overall appearance of the final job. Make sure you understand where seams will be and how seams may affect the overall appearance of the stone. This is especially true when installing some of the higher-end varieties with obvious veins and movement. *(see figure 1 overleaf).*

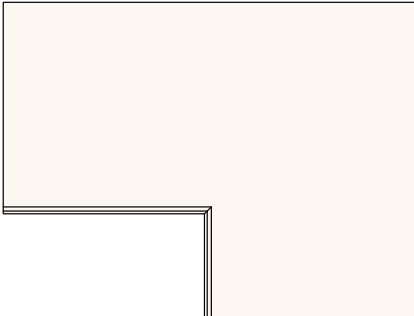
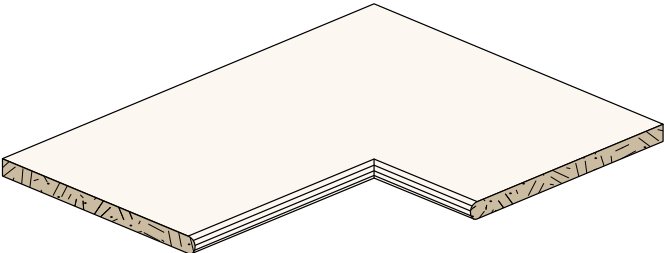
With engineered stone/ Quartz surfaces it is vital that the following guidelines are observed:

- For cut outs: radius all inside corners to a minimum of 15mm radius (this is dependent on the make and model as some hobs on the market only have a minimal overhang, in which case a 6mm radius is the only option.)
- For one-piece L-shape, U-shape, etc. tops: radius all inside corners to a minimum of 15mm radius to reduce corner stresses. However, 2-piece L-shaped tops and 3-piece U-shaped tops with joints do not need to have an inside corner radius. It is important not to cut into the radius while cutting the linear sections of the cut-out with a diamond blade, as this will create a notch into the radius resulting in a weak point.



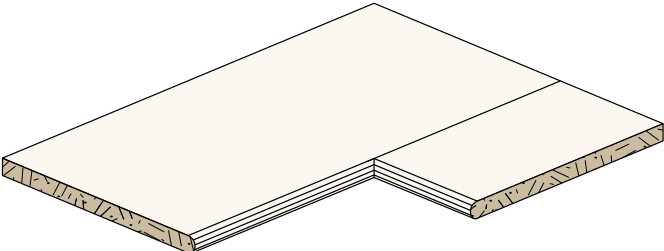
- Joints going through any cutouts are not recommended unless absolutely necessary.
- All joints recommended to be at least 150mm from any cutout
- No joints should be directly above any appliances such as a dishwasher and/or a washing machine.
- There should be no joints on an overhang of a peninsula or island

Fig. 1 - Joinery examples



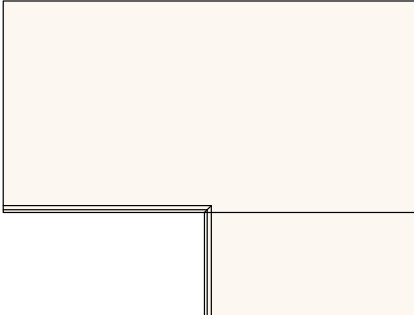
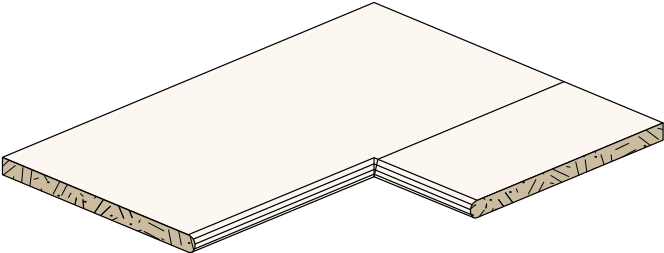
NO JOINT IN CORNER

This is perhaps the most preferred detail visually, as it provides the cleanest looking return. Some hand grinding will be required at the interior corner. Lots of yield in the stone slab adds to the cost of the project. This detail is somewhat more susceptible to cracking if the countertop is not skimmed uniformly, or if there is movement in the cabinets after the installation. For this reason it is advised that there is a small radius ($\pm 15\text{mm}$), instead of a sharp 90° internal corner. In accordance with the majority of engineered stone brands, this radius ensures the fabricated and installed worktop falls within the warranty requirements.



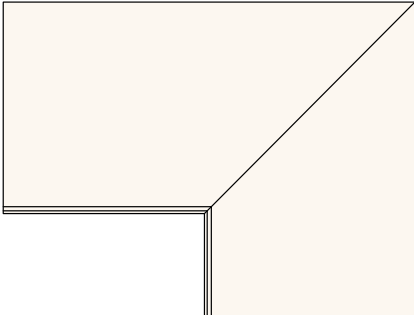
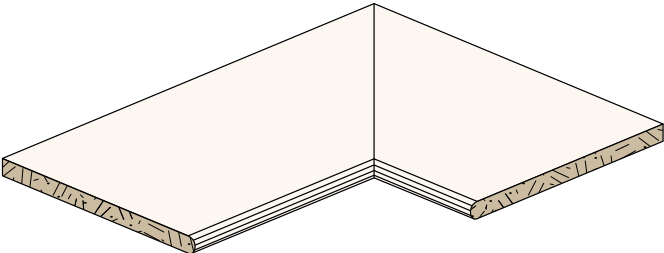
MITRE JOINT THROUGH BULLNOSE EDGE DETAIL

This detail is well suited for edging machines, as it requires no hand grinding of the bullnose.



COMMON JOINT WITH BULLNOSE RETURN CORNER

This detail will require some hand grinding of the bullnose return.



MITRE JOINT THROUGH ENTIRE COUNTER TOP SURFACE

This detail is not recommended. Slab yield is reduced because both pieces need to be cut to full length. The sharp corners are very fragile. Levelling of the countertops is difficult due to the length of the seam and unacceptable usage often results. However, the use of a stone material with a heavy, linear veining trend, may make this detail aesthetically preferable to the previous details.

SPANS AND CANTILEVERS. In designs where part of the countertop is spanning between supports, the length of the span shall be limited to 650mm for 20mm stone thicknesses and 900mm for 30mm stone thicknesses. In designs where the countertop is cantilevered or overhanging the supports, the cantilever shall be limited to 150mm for 20mm thick countertops and 250mm for 30mm countertops in natural stone and 300mm for 20mm stone thicknesses and 400mm for 30mm stone thicknesses for engineered stone / Quartz surfaces. In no case may the cantilevered portion represent more than 1/3 of the width of the countertop. Cantilevered countertops exceeding these dimensions will require corbelled supports beneath the stone. The exposed underside of cantilevered portions of countertops will be sawn or otherwise unfinished surfaces.

Note: Fragile stones may require corbelled supports for cantilevers that are less than those specified. For both spans and cantilevers an overhang is limited to 13mm for Quartz or engineered stone.

SINK MOUNTS. Sinks are supplied in one of several types: Top mount, (or self-rimming), undermount, and “butler-sink.” In the case of the top-mounted sinks, the weight of the sink and its contents are transferred to the top surface of the stone counter via the rim of the sink. Undermount sinks can be anchored to the underside of the stone countertop or carried by a sub-top. A sub-top or auxiliary framing may be required for either design when more fragile stones are used, or when the sink (with contents) is excessively heavy. It is vital the correct adhesive is used when fitting an undermount sink. A specialist silicone composite adhesive is required to bond the sink to the stone successfully. Plain silicon will not hold the sink in place over time. Once fitted in place, the sink should be braced and left undisturbed for at least twenty-four hours.

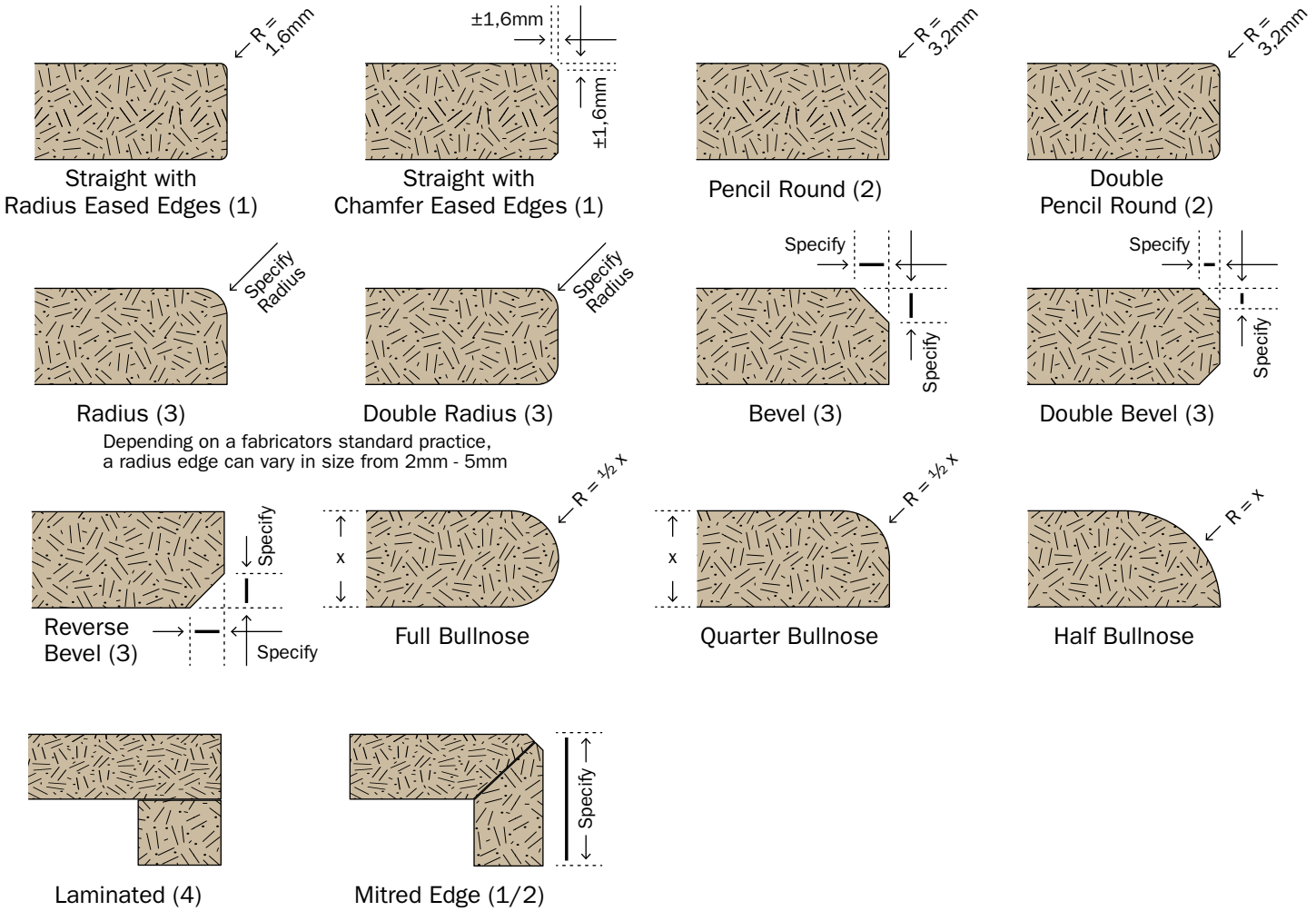
EDGE PROFILES add elegance to the finished project. Edge profiles with narrow projections and sharp corners are more susceptible to chipping than those with a larger, curved silhouette. With machinery and tooling available to modern fabrication shops, many custom profiles can be created which are not shown here. Ask your fabricator if you have something special in mind. Your selection of an edge detail will influence the cost of your countertops (*see figure 2 overleaf*).

CORNER EMBELLISHMENTS. Corners of stone countertops can be cut square, cut to a radius, or projected.

SPLASH-BACKS. Partial splash-backs usually range from 6cm to 20cm high, depending of your preference and slab sizes. Full-height backsplashes cover the entire area between the countertop and the upper cabinets. Splash-backs are normally made of the same thickness as the countertop material. This allows the Fabricator better yield from the slabs, as the narrow strips will aid in the layout efficiency, and it also provides better colour match. Mixing materials of two different thicknesses requires using stone slabs sawn from two different blocks, and colour variation can be pronounced. However, some Fabricators have the machinery to mill down splash-backs using the same slab or block of material to get a thinner splash and match the rest of the counters. On stones with obvious veining, the vein of the splash should match the countertop below. Splash-backs are not assumed to be part of the job and must be specified if you want them.

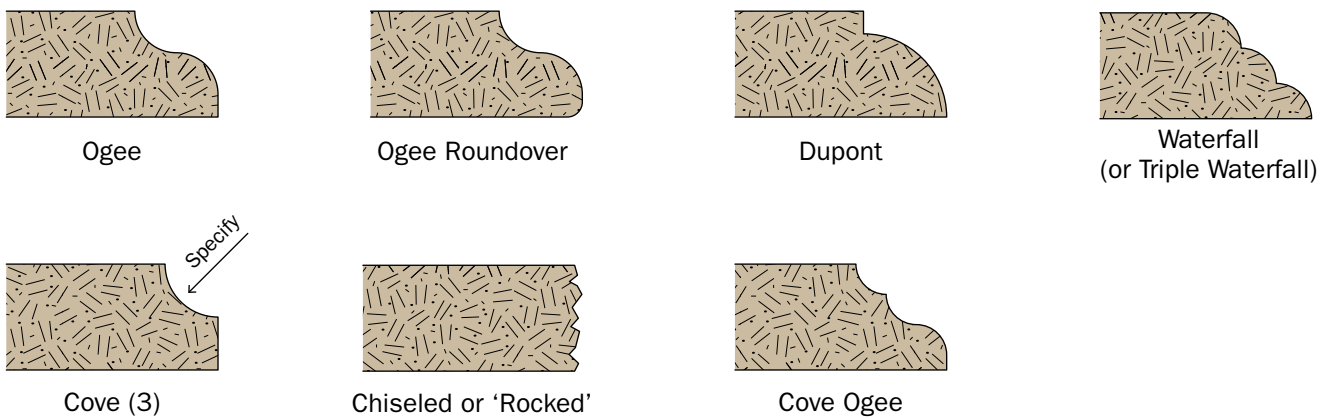
Fig. 2 - Edge profile examples

POPULAR PROFILES



SPECIALISED PROFILES

The ability of a fabricator to deliver these profiles correctly will depend on their experience and tooling. Please check your fabricator is capable of delivering the profile professionally before opting to order it.



NOTES:

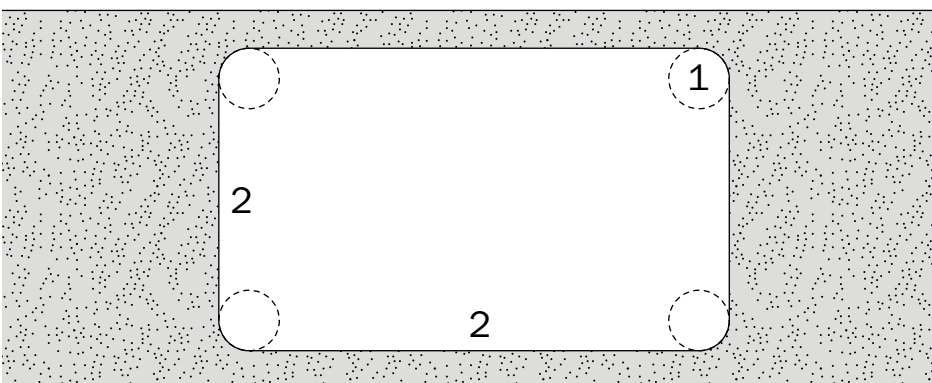
1. The term 'Eased Edge' more commonly referred to as a slightly radiated profile than a slightly chamfered profile although the use of the term varies between fabricators. In each case the edge treatment is slight, and normally does not exceed 1.5mm
2. 'Pencil Round' usually refers to a radius near that of a standard pencil - approximately 3-4mm
3. Radius, Core or Chamfered edge profiles can be any dimension. The actual dimension should be specified at the time of sale. Chamfers are commonly 45 degrees but this is not a specified rule.
4. Many of the profiles shown on this drawing can be done with laminated edge details

7. QUALITY FABRICATION METHODS

FINISHING EDGE PROFILES. Professionally finished edge profiles will be a constant thickness and smooth along the entire length. Edges are finished to the same type and quality of surface as the top, unless a contrasting edge surface has been specified for accent purposes. When working with resin treated slabs, exact colour match between the edge surface and the top surface may not be achievable. To avoid chipping or cracking it is best that the profile be rounded or beveled to a recommended edge profile of no less than 3mm. Any thinner will make the edge too sharp and susceptible to damage. It is important to note that profile edge polishing can result in the overheating of the stone which can make it brittle causing micro cracks in the material to open up over time or when it is exposed to shock.



CUTOUTS FOR AUXILIARY EQUIPMENT must conform to equipment templates, with allowable tolerances. Please verify that the equipment templates match the equipment you are installing. There have been cases where the supplied manufacturer templates did not match the sink, cooktop, etc. It is vital that the correct template from the supplier is used and not just the actual sink or appliance as the cut out sometimes has to be bigger than the actual unit to allow expansion and or ventilation. In the interest of safe handling, some cutouts may be partially or completely performed in your home after installing your stone.



ALL MATERIALS should be cut using the core drilling method.

A 20-35mm core drill should be used.

4 holes (1) are drilled first, after which the sink profile cuts (2) should be made.

Cut outs on all stone materials should always be done by first core drilling holes at the four corners of the cutout. Only then should the stone be cut. The edge profile within the cut out should hence be rounded with an approximate 3mm radius. Failure to do this can result in the stone cracking and loss of the products warranty. Dry cutting and polishing of the cut-out edge profile can also lead to overheating of the stone, making it brittle and susceptible to cracking.

8. SAFETY RESPONSIBILITIES DURING FABRICATION & INSTALLATION

It is important to note that stone products such as granite, marble or quartz surfaces are not hazardous when used by the end consumer. They are completely safe for domestic and commercial use. However, the fabrication processes create respirable crystalline silica particles, which are hazardous to the health of fabrication workers and any others who are continuously exposed to it.

WHAT IS SILICA? Silica is one of the most common minerals to be found on earth. Glass, beach sand, silicone, and granite are all silica materials. There are two forms of silica – crystalline and non-crystalline. Crystalline silica is the most dangerous to your health and is the type of silica found when fabricating stone. The most common form of crystalline silica is quartz, which is found in sand, gravel, clay, granite, diatomaceous earth, and of course, engineered stone. When we talk about silica exposure we are talking about crystalline silica.

HOW ARE YOU EXPOSED TO SILICA? Fabricators and their staff could be exposed to silica when cutting, grinding, drilling, sanding, mixing, or demolishing materials containing silica.

HOW ARE YOU AT RISK? The size of the airborne silica particles determines the amount of risk. Smaller particles can be inhaled deep into the lungs where they can cause damage. Larger particles, such as beach sand, are not as great a concern because they are too large to inhale.

The fabrication of stone surfacing materials produces dust containing fine particles of silica. Silica particles may damage the lung tissue. To protect itself the body traps these particles in scar tissue. This however, decreases lung capacity and makes breathing difficult. Continued work place exposure to the dust without adequate protection or preventative measures, results in a build-up of this scar tissue over time. This stops the lungs being able to operate to adequate capacity and stops them effectively extracting oxygen and releasing carbon dioxide.

The wearing of correct protective wear in the work place when fabricating stone is legislated by the South African Department of Health. If the necessary legislated precautions are not taken your staff may be at serious risk of illnesses such as silicosis, which is characterized by fibrosis of the lungs. Silicosis is a chronic, incurable, progressive disease, which may cause severe physical disabilities and could be fatal. Medical opinion is that exposure to airborne crystalline silica increases the risk for lung cancer, chronic obstructive pulmonary disease (COPD) and kidney disease, and some also believe it increases the risk for some auto-immune diseases like rheumatoid arthritis. Pre-existing physical disorders may also aggravate the adverse effects of exposure to silica dust.

WHAT SHOULD YOU DO TO PROTECT YOURSELF, YOUR STAFF & YOUR CLIENTS? If fabricators are not already complying with local and international health and safety guidelines for working with silica, they should implement a program immediately to ensure the well-being of your staff. Some of the changes that can be made are:

- Watering down of dusty areas or processes, often with chilled water.
- The wetting of foot and sidewalls with water and surfactants, to consolidate the dust to prevent it from becoming airborne.
- Effective ventilation management.
- Installation of filtration units that filters respirable dust from air to an acceptable level before it enters the fresh air system.
- The provision of personal protective equipment

- Improved work practices (such as working with wet tools);
- Implementing effective health and safety training programs – these should be update and reinforced regularly.
- A formal company Silica Control Program should be developed and it should be reviewed and assessed on a regular basis and updated as necessary.
- A medical surveillance program for workers who are exposed to respirable crystalline silica and who are required to wear respiratory protection should be put in place. This should include regular medical examinations and tests to ensure they have not already been exposed. Medical examination and surveillance may include a physical examination, along with medical and work history review, a chest x-ray, a pulmonary function test, and other tests that may be deemed medically necessary. Records of this medical surveillance program should be kept and employees should be made aware of the availability and need for these checks as well as the serious consequences of failing to wear protective gear and comply with your silica protocol.

WHAT ABOUT INSTALLING STONE WORKTOPS? It is important to ensure that installation teams and customers are kept safe from silica too.

- Where possible all surfaces should be fabricated in the factory and not at the customer's premises.
- If grinding or cutting of the stone on site is needed then opt for the wet method and work outdoors.
- If working outdoors is not possible then opt to use cutting or grinding equipment that has an integrated dust collector with a filter.
- If the customer has a heating/air-conditioning system this should be shut down and sealed off.
- After completing an installation, thoroughly clean the work surface and remove all dust using wet methods and a vacuum cleaner with a dust filter.
- All work should be performed with the appropriate respiratory protection against silica dust (as detailed above), along with eye, ear and skin protection.

Should fabricators fail to put the necessary safety protocols in place to protect their staff and customers they are placing themselves at risk to be sued or possibly even a class action from their staff. Class actions have already been successful overseas in taking collective action against employers who have been negligent. While we understand how difficult it is to get staff to wear their protective gear particularly if it restricts them while they work the responsibility is ultimately falls to the business owner. All KSA stone and fabrication members are expected to ensure the safety of their staff and customers by putting the necessary precautions in place and by following standard health and safety guidelines.

9. INSTALLATION METHODS

DRY ASSEMBLY. At the project site, it is recommended that all stone pieces be “dry assembled” in place to verify satisfactory fit prior to the application of adhesive.

SHIMS are commonly employed to level the stone countertops. Shim material may be wood or plastic. Maximum spacing between shims is 600mm. Alternatively, longer spacing between shims may be used if the stone is supported with a non-compressible filler material (usually epoxy or polyester resin). This practice is often referred to as “hard packing.”

ADHESIVE. The stone countertops are secured to the substrate with a non-staining adhesive. Common construction adhesives or silicone sealant are the most popular materials used. The use of neutral cure silicone is recommended as the porosity of some stone (mainly granite and marble) will absorb the oily properties in the acetoxysilicones and can in some instances permeate the stone resulting in permanent damage.

FINAL POSITIONING AND JOINT FILLING. Final positioning of the stone is done either manually or with the aid of commercially available stone-alignment tools. Filling the joints is normally completed prior to final positioning of the stone units, allowing the filler material to extrude out of the joint as the stones are pulled into alignment. Cut slotting into the material is recommended where two counter tops meet, to prevent the joints from loosening due to movement or settling. The stone surface should be masked to prevent contact by the filler material.

SEALER APPLICATION. After the natural stone countertops are installed and the seams are filled, a sealer or impregnator may be applied. Refer to the Reinforcement Techniques section below for further discussion of these applications. Alternatively, some fabricators prefer to apply the sealer or impregnator in the fabrication shop prior to transporting the pieces to the project site. Some natural stone is more porous than others and may require sealing on a regular basis after installation.

Engineered stone/ Quartz surfaces should not be sealed. The manufacturing process of the stone gives it a very low porosity. Engineered stone should only be sealed with the written consent of the supplier / manufacturer or the stone’s guarantee may be lost.

10. TOLERANCES

The tolerances listed here are achieved using skilled tradesmen following standard industry workmanship practices. Due to variations in fabrication equipment and stock availability, these tolerances may not be achievable, or in some cases, closer tolerances may be achievable. Therefore, for any particular project, you and your contractor may agree to tolerances that are more or less stringent than those listed here. Such agreements should be documented in writing. Unless otherwise agreed, the tolerances listed here are acceptable guidelines.

The tolerances in this section pertain to large stone panel-type countertops only.

JOINT (SEAM) WIDTHS between two stone units should equal 1.5mm, with a tolerance of $\pm 0.4\text{mm}$. In such cases where a larger joint width has been specified, the tolerance is to be $\pm 25\%$ ($\pm \frac{1}{4}$) of the nominal joint width. Joint width does not include the dimension of an arris (a small

chamfer, approximately 1.5mm x 1.5mm on the stone edge. When an arris is used, the perceived joint width may be greater than the actual width due to the seam filler occupying the width of the arris.

SLAB THICKNESS. The thickness of the stone slabs used in a given project shall not vary by more than 2mm between the thickest and thinnest slabs.

EXPOSED EDGES of adjacent stone slabs must be matched in thickness and properly installed so that neither the top nor bottom surface exceeds lippage tolerances.

JOINTS AT MATERIALS TRANSITION. Visible joints between stone and other materials (e.g., cabinetry, gypsum wall board) shall be 3mm, with a tolerance of ± 1.5 mm, and filled with a soft, elastic material. Exceptions to this would be the joint between a full height backsplash and the underside of the upper cabinets, which is to be a nominal 6mm with a tolerance of ± 3 mm. Concealed joints between the stone and other construction materials (e.g., stone-to-wall joint underneath the backsplash) shall be sized to ensure a minimum of 3mm of cover.

SLAB FLATNESS AND LEVELNESS. Individual stone slabs are to be flat within 1.5mm when measured with a 1.2m straight edge. Finished countertop surfaces including multiple stones are to be both flat and level to 3mm across 3m.

11. ADHESIVES AND JOINT FILLERS

TYPES. Adhesives used for stone installation can be either standard construction adhesives or elastic sealants with strong bonding properties to both the stone and the substrate. Construction adhesives will normally provide greater bond strength, while elastomeric sealants will provide some forgiveness for movement within the cabinet and sub-top underneath. Excessive movement of the substrate, regardless of the type of adhesive used, will result in the cracking of seams or the stone itself. Verify that the product used does not stain the stone material.

SEAM FILLER MATERIALS. Seams in the stone countertop are usually filled to the level of the top surface. The most common filler materials are polyester resin, epoxy resin, elastomeric sealant, and grout. Grout is usually only used for cladding installations and not for countertop installations. Elastomeric sealants can be made from silicon, polyurethane, or acrylic bases.

12. RESIN-IMPREGNATED SLABS

The application of resin to the surfaces of stone slabs has become an ever-increasing practice. The intent of this procedure is to fill pits, cracks, and fissures of natural stones with a glossy resin to enhance the appearance of the polished slab. When received, the resin treatment is usually easily detected by viewing the raw edges of the slab. Evidence of excess resin is usually visible on the edges of the slab if the stone has been treated.

DESCRIPTION OF PROCEDURE. The process involves evenly applying the resin on the surface of the cleaned, sawn slab. This is frequently done in an automated process, although some suppliers will do this manually. Depending on the equipment used, the slab may be placed over a large vacuum table to draw the resin deeper into the stone. The resin is allowed to cure, which may or may not be accelerated with heat application. Once the resin has cured, the slab is polished. The polishing grinds most of the resin from the stone surface, so that it remains only in depressions and some inter-crystalline regions of the slab. The amount of surface area that remains as resin varies due to the natural features of the material, but it is usually a fraction of one percent (1%). The resin used in this process is commonly an epoxy, polyester, or acrylic based polymer.

DESIGN CONSIDERATIONS. While the intent of this process is to provide a cosmetically more attractive surface, you should be aware of several characteristics of resined stone:

- **Colour.** The resin application normally makes the colour of the stone somewhat darker than an untreated slab. This becomes an issue when finishing the edges of the countertop, as the colour of the edge will be lighter in appearance than the colour of the face surface. Several products are marketed in the industry for darkening the edge, but none have been found to be universally successful.
- **Interaction with Sealers.** There have been cases of incompatibility between a given resin and fabricator applied sealer combination. This usually results in a “cloudy” or “blotchy” appearance after the sealer product has been applied.
- **Structural Flaws.** The resin process can hide natural fissures/cracks or other blemishes which are structurally influential features of the material. Assessment of the structural worthiness of the material can be made more difficult as a result.
- **UV Light Exposure.** Nearly all of the resins currently in use are vulnerable to colour change or surface degradation when exposed to ultraviolet light. These materials are therefore not suitable for exterior applications.

13. REINFORCEMENT TECHNIQUES

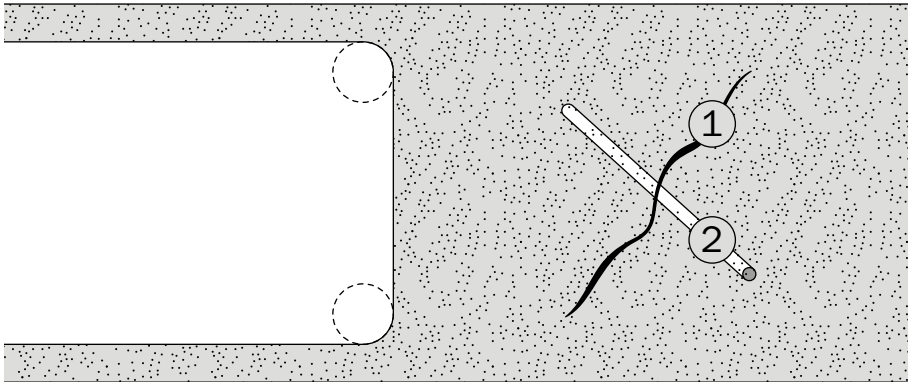
As products of nature, stones have varying strength and behavioural properties. Stones of lesser soundness or stones that have had substantial areas removed from the slab (e.g., sink cutouts) will benefit from reinforcement by a variety of techniques.

FIBERGLASS MESH. A common reinforcement for stone slabs of limited soundness is to apply a fiberglass mesh to the back surface of the slab. The slab is either supplied with this already on the underside of the slab from the supplier or the fabricator completes this process in the shop. The adhesive used in this application is commonly an epoxy or polyester resin.

SPLINES. Seams, particularly those between narrow stone pieces, are often put together using a steel or stainless-steel key. Commonly, a large washer is used as the spline key. The metal is fully encapsulated with polyester or epoxy resin and fitted to closely cut slots in the stone, similar to the “biscuit” joint reinforcements used in woodworking.

RODDING. A commonly seen method of countertop reinforcement is the technique referred to as “rodding.” Rodding is beneficial to narrow strips of stone material, such as those in front or behind sink or cook top cutouts. This technique requires a shallow kerf (a narrow cut or groove) in the underside of the stone slab. The kerf is then closely fitted with a metal or fiberglass rod, which is

then fully embedded in epoxy or polyester resin. The rod has greater resistance to bending than the stone and helps prevent the stone from bowing. A strip of fiberglass mesh backing is often applied over the rodded region for additional reinforcement. It is not advisable to use mild-steel rodding as this may well rust with time especially if used on a lighter coloured granite which may be porous. The rust will corrode the rodding leading to possible breakage of underside of the stone which will overtime travel to the surface of the stone.



When working with natural stone like marble and granite where natural fissures occur it is essential to strengthen the fissure by adding a surfacing support 'rod'. This would be done from the bottom of the material so that no rodding is visible from the top surface.

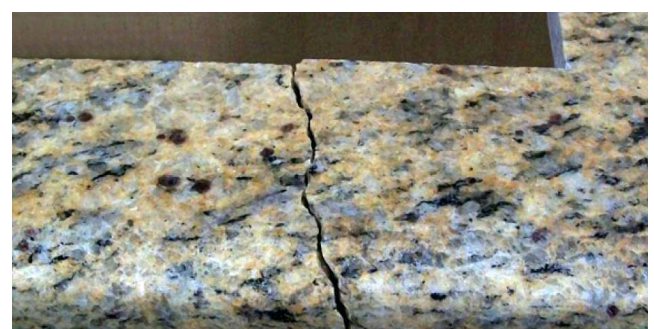
14. ALLOWABLE REPAIR

Stone countertops in need of repair require competent, experienced artisans to achieve the desired results. Repairing stone is permitted when the refurbished region is not in a structurally significant area of the countertop, and when it can be accomplished skillfully so that the repair is consistent in colour, texture and strength with the rest of the slab.

FISSURES occur naturally in many stone types. A fissure is defined by the American Geological Institute as “an extensive crack, break, or fracture in the rock, which may contain mineral-bearing material.” The term “fissure” is used commercially in the stone industry to describe a visible separation along intercrystalline boundaries or the voids between mineral crystals. This separation may start and stop within the field of the stone or extend through an edge. A fissure differs from a crack in that it is a naturally occurring feature in the stone.

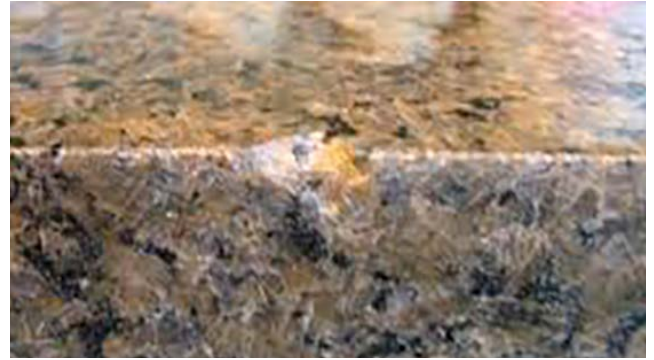


CRACKS occur in stones as a result of mechanically induced stresses during handling, fabrication, transport, or installation. When cracks are detected in slab material prior to fabrication, the best method is to simply avoid them during the layout process. In stones with lesser soundness properties, this option may not be practical, or possible. When working with such stones it is



common practice to repair cracks by cementing them together with epoxy or polyester resin, either with or without dowel reinforcement. Cracks that occur as a result of handling-induced stresses are often more difficult to repair, as they commonly include chipping in addition to the crack. Repair is frequently performed by injection of a penetrating resin adhesive, which may be dyed to match the stone, and then rebuffering the area after curing of the resin. In many cases, the entire stone must be re-polished to make the repair unnoticeable. If the repair is attempted but unsuccessful, the stone is to be replaced with a new piece.

CHIPS can occur in stones either as a result of sawing operations or handling and restraint devices. Particularly in the igneous stone varieties, the exiting portion of the diamond blade will create many small chips. A small chamfer, called an arris, of approximately 1.5 x 1.5mm can be used to eliminate most of these small chips. The use of an arris will make the seam appear wider than its actual dimension when filled. Larger chips may be repaired with epoxy or polyester resin if the completed repair is consistent in colour and texture with unrepaired areas of the slab. In many materials, the resin used in the repair will appear more natural if it is not dyed. It is important to note that any stone can chip when something heavy like a large pot or serving dish makes abrupt contact with a polished or profiled edge.



PITTING of the countertop surface, particularly in granite material, is a commonly seen characteristic on natural stone. Granites are made up of several different minerals, each mineral having a different hardness. Granites contain quartz, feldspars, biotite, amphibole, ferrous titanium oxides, and other mineral combinations. All true granites have biotite in their composition. Because biotite is relatively soft and flaky, the first few layers are removed during the polishing process, causing pits throughout the slab. Some granites have more biotite throughout their composition than others. The higher the biotite content of the stone, the more pits it will have. Most polished igneous rocks will have varying degrees of pits, depending on the amount of biotite, muscovite, and phlogopite in their composition. The pits do not make the granite less durable or otherwise inferior, and do not in themselves qualify the slab for replacement. Pits are common in all granites and should be expected when dealing with a natural, polished stone containing several types of minerals of varying hardness. It is usually best to not attempt repair of pits, as most repair techniques will not cosmetically improve the countertop.



15. MAINTENANCE

APPLICATION OF SEALERS. The application of a topical sealer or impregnator is a common step in decreasing the vulnerability of the stone to stains. The application of a sealant to engineered stone is not necessary.

TOPICAL SEALERS cure as a film on the stone surface. Since the material is actually covering the stone, the appearance of the stone surface may be altered by the application of this type of product. This material will provide somewhat of a sacrificial layer over the stone, and will absorb most of the wear on the countertop. Since the sealer is softer than the stone, normal use of the countertop will result in abrasion of the sealer surface and dictate reapplication to maintain the original luster of the surface. It is advised that your natural stone surfaces are resealed by the fabricator every 6-12 months depending on the type of stone. A properly applied topical sealer will normally reduce, although not eliminate, the vulnerability of calcareous stones to attack from mildly acidic solutions.

IMPREGNATORS will penetrate the stone and cure a few millimeters below the surface, residing in the microscopic spaces between the minerals in the stone. These products do not actually “seal” the stone, and are more correctly referred to as a repellent rather than a sealer. As such, they are formulated to prevent transmission of liquids, while allowing transmission of vapour (not unlike ‘breathable’ fibers). Since they reside below the actual surface of the stone, the change to the appearance of the stone surface is minimal. Impregnators will be either hydrophobic, in that they repel water-based fluids only, or oleophobic, repelling both oil and water-based fluids. The Manufacturer of the impregnator product will recommend a reapplication interval.

GENERAL PRECAUTIONS. When any surface protection product is used, care must be taken to read and follow the Manufacturer’s written instructions accurately. This will provide the greatest benefit from the application and will guarantee safe handling of the product.

HEAT AND TEMPERATURE CHANGES. If your hob has been installed too close to your splash back and the hot pans are touching the splash back this can cause thermal shock causing the splash back to crack. If the hob has not been correctly installed, giving enough space for expansion and contraction, and the correct insulation material used then this too can cause the stone to experience thermal shock that can lead to cracking. Placing anything that gives off extreme heat or cold or that changes the temperature of the stone quickly directly onto the stone can cause thermal shock and cracking. This would include warming trays left on for long periods of time. Use of a place-mat or trivet is advised to prevent potential damages to your surface.

CARE AND CLEANING PRACTICES. The natural stone you have purchased for your home or office is an investment that will give you many years of beautiful services. Stone is a natural product and simple care and maintenance will keep it looking beautiful. Make sure you understand which methods are best for your particular stone countertop. See the KSA’s Care and Maintenance Guidelines (*Annexure B of this document*) or download it from the KSA’s web site www.ksa.co.za

DISCLAIMER:

This document [FABRICATION AND INSTALLATION GUIDELINES AND BEST PRACTICE] covers the industry best practice that all KSA registered stone and surface fabricators will be held to in the event of a dispute. It is important to note that various stone suppliers have fabrication and installation guidelines specific to their brand. It is important to refer to these specific guidelines as well as the KSA’s best practice rather than solely operating from the KSA’s best practice.

The KSA will handle all issues with interior fabrication, but will not handle complaints linked to interior and exterior large format cladding.

Failure to observe any specifics listed in a specific brands manual could affect a stone’s guarantee.

This document has been endorsed by the following KSA Stone and Surface Material Suppliers:

ISS – Caesarstone, Rudy's choice, Café Quartz; Salvocorp; Natural Stone Bulk Supply; Continua; Franke; Cosentino – Silestone, Dekton; Teramo Quartz by Sangengalo; WOMAG; Legacy Quartz by Granite Projects.



The Kitchen Specialists Association

www.ksa.co.za

Gauteng
tel: 076 411 9638
fax: 086 561 5655
gauteng@ksa.co.za

Kwa-Zulu Natal
tel: 082 721 5314
fax: 086 552 1819
kzn@ksa.co.za

Western Cape
tel: 066 487 8564
fax: 086 673 4898
westerncape@ksa.co.za



Dear Members

The KSA has received a lot of complaints and concerns about the amount of cheap quartz stone products coming into South Africa. This stone has led to a rise in stone related disputes as well as concerns from the KSA national and regional committees as to the implications for members making use of cheap stone with no certification and warranties. As such we have been asked to give you some guidelines on what to be aware of when opting to work with stone not coming from a reputable source with proper warranties.

Predictions point towards quartz continuing to be a popular choice for countertops. As this product continues to grow in demand, more and more 'cheap' imports are making their way into the country. While countertops may look almost identical on the surface to other well-established brands, there are problems which can be commonly found with these 'cheap' imported countertops.

Quartz countertops are man-made products comprising around 90% quartz with the balance made up of resins, polymers and pigments. Cheaper products on the market are often produced without adhering to requirements regarding the ratios of and quality of ingredients used. By compromising the ratio and quality of material composites, the stone becomes inferior and unable to uphold the same standards as products manufactured to the correct ratios and with the right ingredients. Problems that can be seen as a result of incorrect ratios / quality during manufacturing include the following:

- 'Cheap' quartz is often manufactured using higher percentages of resin with less quartz and this can result in resin pooling. This means the countertop can become more flexible and likely to bend during transportation. A high-quality quartz product will contain approximately 93% quartz.
- As the amount of resin is not controlled, the amount of pigment can also vary. This can result in colour inconsistencies which can mean that a countertop can suddenly change colour and pattern in areas.
- Inferior and/or toxic pigments that contain lead or cadmium are also often added to cheaper products. As these countertops are often used in food preparation areas, like the kitchen, these toxins are then introduced to digestive system and can prove dangerous.
- Excessive amounts of formaldehyde are also often added during the manufacturing process; and these fumes can continue to be released for up to 5 years. This can be particularly harmful in an indoor application if there is poor ventilation.
- There are often inconsistencies in the thickness of the slabs.

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www.ksa.co.za

Gauteng
tel: 076 411 9638
fax: 086 561 5655
gauteng@ksa.co.za

Kwa-Zulu Natal
tel: 082 721 5314
fax: 086 552 1819
kzn@ksa.co.za

Western Cape
tel: 066 487 8564
fax: 086 673 4898
westerncape@ksa.co.za



- Well manufactured stone is subject to both high heat and pressure. Cheaper stone is usually baked at a lower temperature for a shorter time and is subject to less pressure during the manufacturing process. This makes it more porous, less stable and more prone to bending or breakage, chipping or scratching.
- Be aware that some products are not quartz based but actually marble based. The products may appear to look the same but it is vital that you check this, as a marble-based product will be considerably more vulnerable to scratches, chips and stains.
- Most of these inconsistencies cannot be detected visually meaning that they only become apparent once the product is installed on site or once they have been in use for some time.

As there is no government body checking these imports to ensure they meet a minimum standard we encourage you to take up the responsibility and check the source of all stone you sell or recommend to your customers. There are certain international standards that these slabs should meet in order to ensure that the product you are receiving is not substandard and/or toxic. Standards which are of importance include: ISO 9001 for quality management, American Greenguard standards and also the International Health and Safety Foundation standards which ensure that the countertop surfaces are qualified for unrestricted use in the kitchen and food preparation environment. We advise that you do not recommend or sell stone that comes from an unknown source and that you opt to work with established brands backed by reputable importers or fabricators who are offering a long-term warranty on their product.

Many thanks

Stephanie, Megan, Kerry, Carmen and Marlise
The KSA Team

*PLEASE NOTE: The information contained herein is for informational purposes only and is based on the **opinion** of the KSA and the experts consulted in compiling this document.*



KSA CARE AND MAINTENANCE DOCUMENT FOR KITCHEN FINISHES

This document has been compiled by the Kitchen Specialists Association with input from a variety of our supplier members. The purpose of this document is to ensure you, the consumer, are fully aware of the care and maintenance that is required to look after the kitchen finishes you have selected. Please be advised that the longevity of your kitchen relies on you following these care and maintenance directives. It is important to note that the KSA will be unable to assist in any dispute where these directives have not been adhered to.

Once hand-over of the work has been done it is the responsibility of you, as the customer, to ensure you read and understand the correct way to clean and maintain your kitchen. The kitchen company and/or material supplier/manufacturer is entitled to void any guarantee if care and maintenance has not been followed.

The advice below is generic and designed to cover most products but it is vital that you heed all maintenance instructions issued to you by the supplier as they may vary slightly from the advice listed below.

DOOR AND PANEL FINISHES

1. Melamine

General Cleaning - Using a mild household cleaner wipe down the door or panel with a soft cloth taking care not to rub too hard. Use a soft dry cloth so as not to leave any residue on the door or panel. You may also use Methylated Spirit on a soft cloth, using a circular cleaning motion. Thoroughly clean the area with a damp cloth (water and *mild* detergent only) to remove any residual Methylated Spirits. Always ensure that you refer to the recommendations provided by the cleaning product manufacturer before use.

To ensure that your material warranty will not be void, DO NOT use any of the following: Commercial Cleaning Products, Abrasive Cleaners, Scouring Pads or Abrasive Papers, Acids and Alkalis, Solvents, Thinners, Turpentine (Turps), Ammonia, Bleach, Acetone, or any other cleaning agents containing organic solvents or the above mentioned products. Avoid contact with sharp instruments.

The use of a cooker hood, or extractor, whenever cooking, is advised. This will help avoid steam and cooking oil vapours from adversely effecting surfaces.

Exposure to excessive water or standing water will cause damage to the substrate and cause the door or panel to 'blow' and warp. Constant exposure to direct sunlight can alter the colour of the melamine over time.

2. PVC Foil Wrap

For general cleaning, only use a mild soapy solution. Wipe down with a damp cloth and dry with a soft clean cloth. Dust with a soft cloth only. Don't use wax-furniture polish or any cleaning products that contain: alcohol or solvents. Don't use abrasive cleaners, acetone, petrol or glass cleaners as this will damage the surface of the doors. Cooking splashes should be wiped up immediately using a damp cloth. Use a micro fibre anti- scratch cloth when cleaning.

Excessive exposure to heat and damp can cause the wrap to shrink and pull away from the substrate. The use of a cooker hood, or extractor, whenever cooking, is advised. This will help avoid

steam and cooking oil vapours from adversely effecting surfaces. Constant exposure to direct sunlight can alter the colour of the wrap foil over time.

3. High Gloss Laminate / Acrylic

Always keep the protective film in place until installation is completed and all other service providers have finished their projects. The protective film should be removed within 6 months of completion of the job to avoid it ageing and becoming difficult to remove.

For general cleaning use a mild household cleaner. Wipe down the door or panel with a soft cloth taking care not to rub too hard. Use a soft dry cloth so as not to leave any residue on the door or panel. Any spilt chemicals and liquids that can cause stains, must be wiped away immediately using a damp cloth and soapy solution. Repeat this process as necessary. Minor scratches and scuffs can be removed by hand with selected automotive liquid polishes and soft microfiber cloths. The polish must be suitable for painted surfaces. Always adhere to the manufacturer's instructions. Test the polish on an inconspicuous area first to ensure suitability.

Exposure to excessive water or standing water will cause damage to the substrate and cause the door or panel to 'blow' and warp. Constant exposure to direct sunlight can alter the colour of the laminate over time.

4. Ultra Matt Laminate

Cleaning and care can vary between brands. Use of a micro fibre cloth and a mild solution of a non-abrasive detergent and water is recommended. Some ultra-matt products do show finger-marks easily in highly lit areas, particularly when the material is in a darker colour. These can be polished off with a micro fibre cloth.

Exposure to excessive water or standing water will cause damage to the substrate and cause the door or panel to 'blow' and warp. Constant exposure to direct sunlight can alter the colour of the laminate over time.

5. Veneer, Solid Timber and Hand Painted

Use a micro fibre anti-scratch cloth when cleaning. For general cleaning, only use a 5% liquid soap, 95% water solution. Wipe down with a damp cloth and dry with a soft clean cloth. Dust with a soft cloth only, following the grain pattern of the wood. Don't use cleaning products that contain alcohol or solvents. Don't use abrasive cleaners, acetone, petrol or glass cleaners as this will damage the surface of the doors. It's best to use a damp cloth to remove fingerprints and marks, followed by a clean and dry soft cloth. Cooking splashes should be wiped up immediately using a damp cloth.

You may be aware that wood changes colour when exposed to light; the rate of change being dependant on the species and intensity of exposure. Please be aware that if additional doors are required in the future, a variation in colour is highly probable.

With timber, your door may need upkeep every few months with a wax based product or furniture polish – this will depend on how the company has sealed the product after manufacturing. Please ensure you have checked with your kitchen company whether upkeep of this nature is required.

Excessive exposure to water, steam and humidity can cause the timber/substrate to warp and split. The use of a cooker hood, or extractor, whenever cooking, is advised. This will help avoid steam and cooking oil vapours from adversely effecting surfaces.

6. Duco / Spray Painted Finishes (Matt, Satin, Sheen, High Gloss)

Clean with a soft, clean dampened cloth and wipe dry after cleaning. Don't use cleaning products that contain alcohol or solvents. Don't use abrasive cleaners, acetone, petrol or glass cleaners as this will damage the surface of the doors. Use a micro fibre anti-scratch cloth when cleaning.

Excessive exposure to water and heat can cause crazing of the paint finish and 'blowing' of the substrate. As paint can chip, banging and bumping of the product should be avoided. The product can also scratch if exposed to sharp objects. Please ensure a non-yellowing paint has been used by your contractor to diminish the chances of the paint yellowing. Excessive exposure to light or if the area is locked up and unused for long periods of time can cause the finish to change colour.

Should you need to replace a door/panel down the line the contactor will use a colour spectrometer to try and achieve as close a match to existing doors as possible but a perfect match will be impossible.

WORKTOPS

Your work surfaces can become damaged if mistreated. We would recommend the following basic 'rules' to adhere to: Always use a chopping board. Place hot pans or casserole dishes on protective mats or trivets. Mop up spills immediately, particularly on joins, and around sink and hob cut-out areas. For more detailed instruction for your particular material, please see below.

It is important to note that most suppliers of surfacing material require the consumer to complete and submit a warranty card in order to activate the materials warranty. Failure to submit this card back to the supplier could lead to the product having no warranty. This warranty card should be supplied either by the kitchen company or the fabricator. If you have not received it please enquire with the responsible party as it is the end user's responsibility to ensure this card is submitted. Please also ensure you are fully aware of the limitations to any warranty as the product may not be covered if certain methods of fabrication are used.

1. Laminate

Wipe clean with a moist cloth and mild detergent. For more stubborn marks, leave the detergent to soak for a short while before rinsing thoroughly. (Use only a very small amount of water)

Exposure to excessive heat will create a burn mark on the surface. Never place a pan directly from the hob or oven onto the surface.

Excessive exposure to water will cause the substrate to 'blow' and warp.

2. Marble

Marble is calcified limestone, and its polished surface is susceptible to deterioration by the acidic action of some detergents and acidity content such as that which is contained in lemon juice. Red wine and oil will also stain marbles. Marble is generally used in bathrooms for countertops, wall cladding and flooring. It is softer than granite, and can scratch more easily. However; there is a recent swing back to using marble in kitchens, and accepting scratches and stains as a contribution to the "character" of the kitchen. Some Italian residences that are hundreds of years old have traditional marble countertops, and obviously have staining and scratching. The stone's natural patina (the colour change that occurs over time) enhances rather than diminishes the antique character and beauty of the kitchen and home.

Marble is not always installed with a polished finish, and it is possible to hone or acid-wash the upper surface. A honed finish simply involves the removal of the smooth polished finish with polishing blocks, while an acid-washed finish will leave a slightly textured upper surface.

All marble counter-tops should be sealed with a good quality sealer on installation, and should be sealed as often as is necessary (normally every six months – but dependent on the porosity of the specific marble used). If marble is installed in your kitchen, any stain should be wiped up immediately with a warm soapy cloth to prevent obvious staining.

3. Granite

Stone is a natural product and as such it is impossible to guarantee colour and pattern consistency. If you have only seen a sample there may well be a variance in both from the small sample to the large sheet of stone that is installed. The fabricator and supplier have no control over marks and irregular patterns that occur naturally in the stone. For this reason it is essential for you, the client, to go to the supplier and choose your slab in person.

Once installed, granite will be treated with a sealer which reduces its natural porosity, and provides a protective coating. The tops should not be cleaned or used for 48hrs after the application of the sealant. This sealant should be reapplied by your fabricator every 6mnths to a year to ensure the stone stays in good condition. Your fabricator will quote you on the cost for this maintenance treatment. Remember, all stone is porous and the sealant only assists to decrease the porosity. Harsh substances like red wine, beetroot, coffee etc. can still leave marks if not cleaned away quickly. Some granites are more porous than others (usually the paler the stone the more porous it is). The more porous stones are more susceptible to staining and can even be stained by water (if it is left standing on the surface for any length of time) and cooking fats and oils.

Clean with water containing soap or a mild or neutral detergent using a soft cloth or sponge. Rinse off with clean water. Polish dry with a soft cloth or a micro fibre surface cloth. Avoid use of abrasive cleaning materials including scouring powders, steel wool or metal brushes. Never use bleach and other chlorine-based cleaners, acids, photographic development liquid, alkalis (caustic soda) and concentrated disinfectants on stone surfaces. If any of these products come into contact with the stone, clean them off immediately. Use of these products can strip the stone of its sealant and make it very porous and susceptible to stains that cannot be removed.

Stone is susceptible to changes in temperature. Any exposure to high heat or excessive cold, as well as an abrupt change in temperature, can cause the stone to go into thermal shock and crack. Do not put a hot pan or pot directly onto the stone.

Stone tops are heavy and place a lot of weight on the cupboards and support legs of the cupboards below. Many people like to sit on their countertops or stand on them to gain access to top cupboards. It must be noted that this excess weight on the stone can cause damage to the cupboards below and can cause them to collapse. This kind of excess weight can also cause the stone to crack if near a cut out, edge or joint.

Please note that should a section of the stone need to be replaced, getting an identical colour and pattern match will be impossible.

It is vital that you sign off your stone with the fabricator as soon as installation is complete.

4. Engineered Stone

The rules that apply to granite apply to engineered stone as well, except that engineered stone does not need to be sealed once it is installed by the fabricator. The manufacturing process of the stone ensures that this is not necessary. Should the fabricator believe that for some reason the engineered stone needs to be sealed this should only be done with the engineered stone manufacturer's consent to ensure the guarantee is not void.

5. Solid Surfacing

Use soapy water, ammonia-based cleaners (not window cleaners as they can leave a waxy build up that may dull the surface) or commercially available solid surface cleaners. These will remove most dirt and residue although stubborn residue will require a little stronger cleaner. Spillages of items with strong pigment like coffee, red wine etc. can leave marks if not cleaned up quickly.

To avoid water marks, clean up spills before they dry.

Disinfecting: Occasionally wipe surface with diluted household bleach and water, with a ratio of 1:100.

Small scratches can be buffed out by the fabricator. Do not put a hot pot or pan onto the surface as it can stain and damage the surface.

6. Glass and Porcelain based products

General cleaning involves washing with water or a diluted, household detergent such as dishwashing liquid, which is enough to restore the surface to its original condition. Occasionally, deeper cleaning might be needed especially straight after installation when cement may be left on the surface. Any remaining cement can be removed by washing with warm water or very diluted acidic solutions (diluted vinegar).

Be careful when choosing the cleaning agent to use, as in the majority of cases, damage to the surface is caused by using cleaning products that are too strong (high concentrations, hydrochloric acid, etc.). Sometimes using products that are unsuitable for the type of surface, such as cleaning agents with abrasive particles, can alter the appearance of the surface.

Never use an acidic cleaner when the material has just been laid. The acid could react with the cement glue, and even damage the joints. It is a good idea to soak the surface with a small amount of clean water before treating it with any type of chemical.

Rinse the surface immediately after the treatment to remove any remaining chemicals. Occasionally, the product can retain stains from spills. Some stains cannot be removed in the usual way and need specific cleaning procedures that depend on the type of material and kind of stain. In these cases contact the manufacturer and fabricator for assistance.

7. Timber

Always mop up spills straight away and don't leave wet crockery to stand for any length of time. Particular attention should be paid to the sink area; wipe down the work surface after use. Avoid prolonged contact with metals, such as iron and steel, as these can cause black staining of the timber. Wipe clean using a well wrung out cloth dipped in warm soapy water.

Unsealed solid wood work surfaces require slightly more maintenance than other tops as they need to be oiled regularly. Make use of the oil or other product recommended by your supplier to keep the wood supple and prevent cracking. Always follow the grain when applying oil and use a soft dry cloth. If the top has been sealed you may see fine scratch marks in the sealant over time. These can be filled and made less obvious with the use of a wax based product like Mr Min.

Without this care the tops can crack and warp.

CABINET HARDWARE MAINTENANCE:

1. Over a period of time, cabinet doors may become misaligned. Use a screw driver to tighten, or loosen, the easy adjustment screws on the hinge to adjust a door. Always be aware that excess pressure from leaning on or hanging onto cabinet doors may compromise the hinge, or tear the hinge plate off the cabinet. Always take care when opening and closing doors.
2. It is important to never overload drawers, roll-out shelves and adjustable shelves. Excess weight from heavy items may cause the drawers or roll-out shelves to malfunction and may even cause the drawer runners or shelf supports to fail.

3. Keeping your kitchen cabinets clean will prolong their life and prevent the expense of having to replace them. Remember, that the appearance of your entire kitchen has a significant impact on the value of your house, should you ever find yourself in the position of placing your house on the market. By following this simple maintenance guide you will keep your kitchen in the best shape possible, giving it a well-maintained and polished feel.

We hope you enjoy your new kitchen. Please retain your KSA handover certificate that accompanies this document as proof that the kitchen has been correctly handed over to you by your KSA member kitchen company or stone and surface fabricator.