

A person wearing safety glasses and gloves is using a Bosch angle grinder to grind a quartz surface. The grinder is a Bosch 1612PSD model, as indicated by the label on the handle. The person is wearing a white safety helmet and a grey long-sleeved shirt. The background is a plain, light-colored wall.

vadara™

QUARTZ SURFACES

Fabrication and Installation Guide

Fabrication and Installation Guide

Thank You for your interest in Vadara Quartz Surfaces. As a Fabricator Partner we are providing you the following Safety, Fabrication and Installation Guide. Please thoroughly review the guide and provide us your signature on the attached acknowledgment.

Fabricator Requirements

In order to purchase Vadara slabs a fabricator must agree to the following and continue to remain in compliance with these requirements:

- Complete Stone Shop (bridge saw, water system, etc.)
- Follow Vadara's Safety, Fabrication and Installation guidelines
- Make payments per agreed upon terms
- Conduct visual slab inspection for color match/blemishes/warping etc., prior to cutting material.

Vadara requires that each fabricator as a condition of doing business with us reads, understands and will ensure that his or her employees will follow the Safety, Fabrication and installation information provide in this guide. Fabricators understand that they are responsible for ensuring the dissemination and implementation of the material presented in this guide.

Any failure by Fabricator to comply with the guidelines presented in this guide may result in claims against the Fabricator by end users of the product. Additionally failure to comply will void both our residential and/or commercial warranty as applicable.

PROPOSITION 65 WARNING: This stone product contains crystalline silica a material known to the State of California to cause cancer.

Safety First

As a member of our dynamic and growing industry we believe that safety comes first when handling and/or working with our material. We expect that our Fabrication partner's follow these "common sense" guidelines to ensure a safe and productive work environment for all their employees.

- Keep guards in place and in good working order
- Ground all tools! Never modify three prong plugs to accommodate a two prong socket.
- Keep all work areas clean and free of anything that impedes the safety of your employees

- Don't use any tools in unsafe environments or for anything other than their intended purpose. All tools exposed to water must be equipped with GFCI.
- Keep all work areas well lit, well ventilated, clean & dry.
- Use the right tools for the job. Don't force or modify a tool to do a job it was not intended to do
- Wear the right apparel for the job. Loose clothing, neckties, rings, bracelets and other jewelry may get caught in moving parts.
- Non slip footwear is recommended. Wear a hair protective covering to contain long hair. Wear ear/noise protectors and safety shoes.
- Always use safety glasses or approved eye protection. Ordinary eyeglasses are not safety glasses.
- Maintain all tools in top condition. Keep all tools sharp and clean for best and safest performance. Comply with all manufacturer's recommendations for maintaining tools and equipment.
- Always wear a dust mask and follow all U.S. regulations for proper ventilation. Vadara slabs when being processed/fabricated product silica dust that can be harmful to health.
- Do all fabrication and/or processing of slabs with wet tools reducing the amount of airborne silica dust that may be inhaled.

Respirable Crystalline Silica

Vadara slabs are not hazardous as shipped and used by the end user. Vadara slabs contain crystalline silica (quartz) and fabrication of our slabs creates silica dust.

Unprotected and uncontrolled exposure to such dust is dangerous to your health and can cause severe illnesses such as: silicosis, lung cancer, fibrosis of the lungs, tuberculosis, kidney diseases, abrasion of the cornea, and irritation of the skin and eyes. Preexisting physical conditions may aggravate the adverse effects of exposure to silica dust.

If irritation of the skin or eyes occurs, flush the area immediately with plenty of water. If breathing difficulties are experienced move outdoors into fresh air. In any event of physical discomfort consult a physician.

Wherever our product is fabricated and/or processed a silica control program should be in place in accordance with all applicable laws, regulations, orders and directives. The permissible exposure limits to silica dust should also be met.

Requirements of the Occupational Safety and Health Administration appear at: www.osha.gov

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Safety Data Sheets (SDS) are available at:
www.vadaraquartz.com

General Fabrication Safety Rules

The following safety rules must be followed along with any other applicable safety measures.

- Display a “Hazardous dust” sign in all areas exposed to crystalline dust.
- Wear a suitable dust mask in all areas marked with “Hazardous dust” signs
- Use dust control systems. Check that the dust control system intake, filtration and expulsion systems are functioning correctly
- Use wet tools to prevent airborne dust particles
- Check that all work areas are clean after each shift
- Wear protective apparel when cleaning and maintaining machinery
- Wear designated work apparel at the work site, including shoes and socks
- Change into work clothes at the facility. Shower and change into clean clothes before leaving the facility. Wash work clothes before reuse.
- Wash hands and face before eating, drinking or smoking
- Workers must undergo medical tests as required by local regulations.

Product Information

Vadara is utilized in a wide variety of interior residential and commercial applications including: kitchen countertops, bar tops, vanities, wall cladding, reception and transaction counters. Vadara is not suitable for exterior applications that are exposed to direct sunlight or heat in excess of 300° F.

SLAB SIZES: Vadara is offered in two (2) oversized slabs depending upon color.

SLAB THICKNESS: Available in ¾” or 1 1/8” thickness

NOTE: The slab dimensions are nominal only. They are to be used for transportation and storage purposes. Actual usable slab is slightly less per side and may vary from slab to slab.

If your project requires the full width and length of the slab you must inspect the area around the perimeter for color, polish, transportation damage or any other visible defect. If the slab is unsuitable it should be exchanged prior to cutting.

General Fabrication Guidelines

Follow these guidelines to ensure a quality finished product:

- Do not modify the original surface polish by re-polishing, honing, sealing or in any way altering the original finish.
- Only water cooled tools should be used during the entire fabrication and installation process to avoid overheating the material.
- Do not cut square corners (cross cut), this will create stress points in the slab that may result in cracking.
- When cutting inside corners, always use a core bit to avoid damage to corner area with a cutting disc. Damage to the radius area can cause stress points that may result in cracking.
- Any internal inside corner must be radiused. Cut up to the joint of the drilled hole. Leaving the drilled hole intact.
- Avoid dry grinding/polishing the corners, since overheating the area can result in cracking.
- Never install mechanical fasteners directly into the material (screws, nails etc.) Through bolting is permitted. Ensure that the hole is smooth and free of any drilling chatter.

Material Inspection

Prior to cutting it is the fabricator’s responsibility to inspect the slab material for the following:

- Color match make sure you use material from the same batch
- Manufacturing flaws
- Foreign Objects (wood, metal etc.)
- Blemishes
- Chips, cracks or voids
- Gloss levels



If you cannot cut around a problem area do not cut the slab exchange the slab with your distributor.

Tools and Equipment

The following list of tools and equipment is recommended and/or essential for a fabricator to provide a high quality finished product and to protect the safety of all employees:

ESSENTIAL:

- Bridge saw
- Electric/Pneumatic Polishers (variable speed)
- Diamond grinding wheels
- Diamond Polishing pads
- Grinding Stone
- Core Bits
- Diamond Contour Blades
- Wet profiling Machine (edge router)
- Stone Carts
- A-Frames/storage racks
- Fabrication stands
- Air compressor
- Seaming Clamps
- Water source

RECOMMENDED:

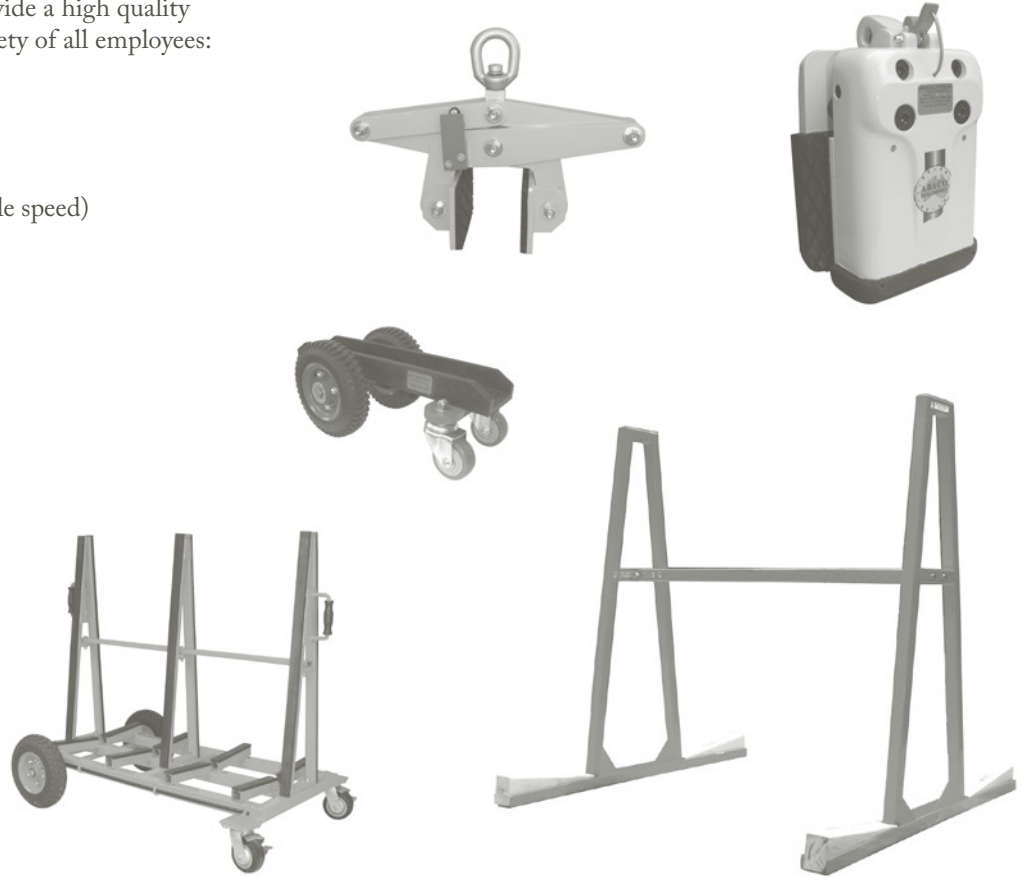
- Water Jet
- CNC
- Edge Profiler (Automated)
- Diamond Jig Saw

SAFETY EQUIPMENT:

- Industrial First Aid Kit
- Safety Glasses
- Dust masks
- Respirators
- Safety Gloves
- Steel Capped Safety Shoes
- Aprons
- Ear Plugs

In addition to this safety equipment list a ventilation system is strongly recommended to further safeguard employees from respirable crystalline silica dust.

Safe Slab Transport



Safe Fabrication Gear



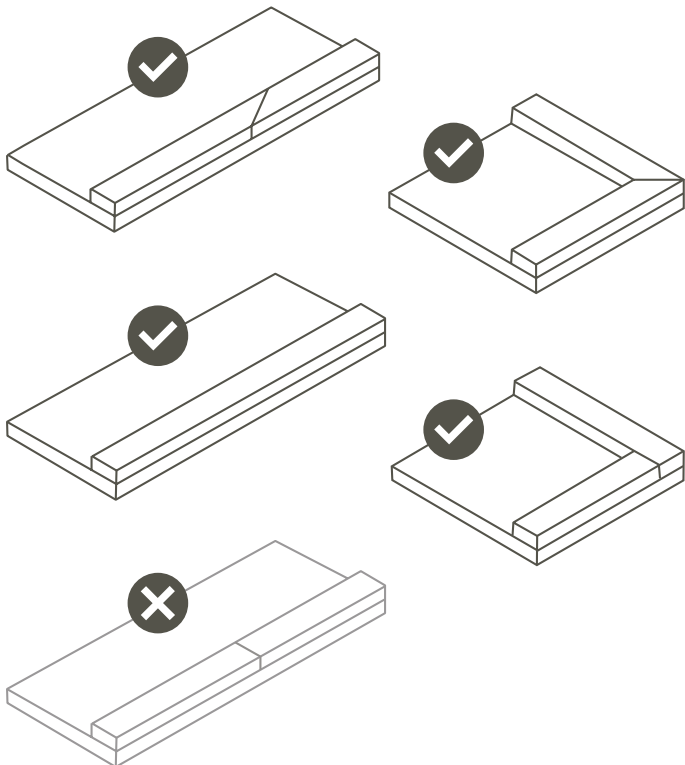
Material Cutting

Perform all cutting using wet equipment and machinery

- Every corner (window ledges, cooktops, sinks, inside corners, etc.) must be radiused to a minimum 3/8". Rounding is not required in inside corners where seams fall at the corners.
- Avoid cross cutting. When preparing a cutout (sink, cooktop etc.) use a core bit. Avoid damaging the area with a cutting disc.
- Any damage to the drilled area can cause a stress point which can lead to hairline cracks in the material. Use wet diamond cutting tools to avoid overheating the material.
- Allow 1/8" expansion gap between the sink or cooktop and the edge of the cutout.
- Whenever possible inside corners for L-shaped or U-shaped kitchens should be fabricated from a single slab. The inside corners must have a minimum 3/8" radius.
- When the distance between a cutout and a joint is less than 6" the joint must be reinforced. This can be achieved by placing the joint over the junction of the base cabinets or by providing a solid underlayment along the entire length of the joint.

Laminations

At all areas of laminations, typically front edges you must ensure removal of any waves or indentations in the material to an even finish. You must also abrade the surface areas to be joined to allow for proper adhesion of adhesive. Vadara is a non-porous material and will not absorb the adhesive. The notches provide a larger surface area to ensure a strong lamination.



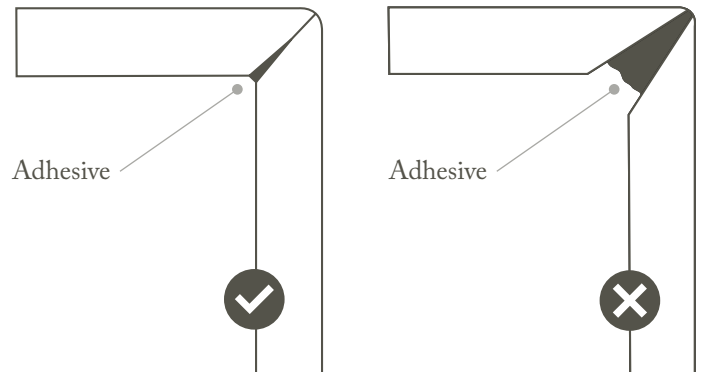
Before gluing the surfaces together wet clean the areas with alcohol. Do not use air compressor to clean the area.

All lamination pieces should be full length of the top piece and cut at 45° angle in the corners. If a full length piece is not possible and joining laminated pieces is unavoidable the joint between lamination pieces must be cut at a 45° angle (see illustration above). A mitered edge reduces the stress on material that can result in stress cracking.

Cut the lamination pieces from the same slab as the surface to ensure color match. Add the lamination pieces to your cutting measurements to ensure adequate material.

Mitered Edges

- Mitered Edges should be done at a 45° angle to ensure maximum strength. The joint should be clean, flush and parallel.
- Mitered edges have the greatest area of weakness and are most prone to impact related chipping. The minimum recommended edge profile is 1/8" bevel and our preferred minimum edge detail is 1/8" Pencil round.
- Chipping is most likely to occur when the adhesive is not distributed evenly throughout the joint.
- Do not cut edges at less than a 45° angle. This makes the edge most prone to chipping.
- Incorrect angles also reduce the types of edge profiles that can be used, since the larger the edge profile, the more the joint is visible.



The use of a professional miter clamp is recommended to tighten the joint to create an accurate 90° angle and to prevent adhesive showing.

Edge Details

- All exposed edges must be finished to the same gloss level as the factory surface.
- The minimum edge detail recommended is 1/8"
- Both top and bottom edges should be rounded or beveled (minimum 1/8")
- The larger the surface area of the edge the more resistant to chipping it is.
- For high traffic areas typically in commercial installations we recommend a minimum 3/16" radius on top and bottom and a minimum 1/4" radius on all outside corners.

Seams

- Any internal angled corner in the seam must have a 3/8" radius.
- All seams should be level by adjusting material prior to joining.
- Do not surface polish or grind to achieve level.
- The use of a professional seam setter will make seams as narrow and inconspicuous as possible. Seams should be no more than 1/6".
- Seams located less than 6" from any cutout must be fully supported.
- Never install mechanical fasteners into Vadara
- Determine seam locations carefully. Seams over a dishwasher are not recommended. In the event that a seam must be placed over a dishwasher the use of an isolated, full deck support is required. This allows for proper support and allows for thermal expansion.
- When installing 3/4" (2CM) material the plywood sub-top over the dishwasher must be separated from the remaining sub-top by allowing 1/8" clearance on either side.

Polishing

Polishing on all Vadara products should be done in a progressive manner. Only granite and marble diamond polishing pads should be used during this process.

We recommend the use of premium quality polishing pads and plenty of water for best results. The quality of the pads used during the finishing process will reduce the amount of time required to complete polishing.

Prior to beginning ensure that the surface to be polished is clean, smooth and free from residual adhesive.

Do not over polish the edges beyond the factory surface finish.

Recommended Polishing Steps

Polished Finish: 100, 200, 400, 500-800, 1500-2000, 200-3000-grit diamond pad.

These recommendations serve as a guideline for achieving a polish equal to the factory surface finish. The types of tools, diamond pads and fabrication techniques will affect actual polishing results. Always use water-cooled tooling. Dry polishing may overheat the material leaving the edge susceptible to chipping. Excessive heat also undermines the structural integrity of the slab and while not visible to the naked eye causes the formation of micro fissures leading to chipping, discoloration and unevenness of finish.

- Use lower RPM polishers when using 1000-grit or higher diamond polishing pads.
- Do not use stone "buff" pads
- Do not over polish edges beyond factory surface finish

Adhesives

- The use of a flexible adhesive is required, such as 100% clear silicone when securing the countertops to cabinets, substrate or when securing backsplashes to walls. This allows for thermal expansion.
- The use of non-flexible adhesives such as epoxies, liquid nail, or constructive adhesive will void the product warranty and may result in claims against the fabricator.
- Follow all manufacturer recommendations for the adhesives used during seaming or laminations, this includes the minimum working temperatures of these adhesives.
- Vadara recommends the use of a polyester knife grade adhesive.
- When joining seams we recommend that the adhesives be tinted to the color of the material to provide a minimally visible seam. Always check adhesive color match prior to applying to seamed areas.
- Use a professional seam setting tool to provide as inconspicuous a seam as possible. Seams should be no more than 1/16".

Transportation

Countertop sections are heavy and fragile. Brace all countertop cutouts to avoid flexing of seams and corners.

Always transport materials face to face or back to back. Avoid having the materials slide around during transportation. Always protect the finish face of the material and avoid direct contact with metal, the back of a slab etc.

Good racking is essential when transporting material to job site locations. The materials should be strapped to racking and caution exercised to ensure that the straps are not cut by the edge of the material or otherwise damaged. Replace all damaged straps.

All racking should have a protective layer between the rack and the material. This helps prevent scratching or other surface damage during transport or storage.

Provide adequate number of people to move the finished countertops into the jobsite location.

Installation

The key to a successful project is the time and care taken during the installation process. Poor installation results in an unsatisfactory finished appearance and poor customer satisfaction. Acceptance of job site conditions that are not suitable for installation puts the onus of the installers to rectify the situation prior to installation.

Address all jobsite conditions that require adjustment prior to installation not after:

- Ensure that all cabinets are satisfactorily installed. Check all cabinets for level. The tops of the cabinets shall be flat and true to 1/16" over 18". The cabinets should be attached to each other and secured to the back wall. Make sure that all areas with cutouts have sufficient support.
- Ensure that dishwasher surrounds are adequate to provide necessary support. The front edge of the countertop over the dishwasher should be supported with material that matches the cabinets.

If the cabinets are not installed to these standards inform the homeowner, project manager etc. Do not proceed with the installation until all areas of concern have been rectified.

- Vadara must be supported with strong, stable full perimeter support.
- Front to back support within the cabinet should be provided every 24".
- Use 2.5" support strips to coincide with cutouts. Support must be provided at all countertop joints.
- Isolated support is required over the top of all dishwasher's spaces and under counter ovens.

Overhangs

The following guidelines are provided for overhangs:

2CM (3/4" No Sub-top)

Less than 8"	<i>No additional support required</i>
8-16"	<i>Brackets required every 24"</i>
Over 16"	<i>Legs, Columns or Panels required every 24"</i>

2CM (3/4" with 5/8" Sub-top)

Less than 12"	<i>No additional support required</i>
12"-20"	<i>Brackets required every 24"</i>
Over 20"	<i>Legs, Columns or Panels required every 24"</i>

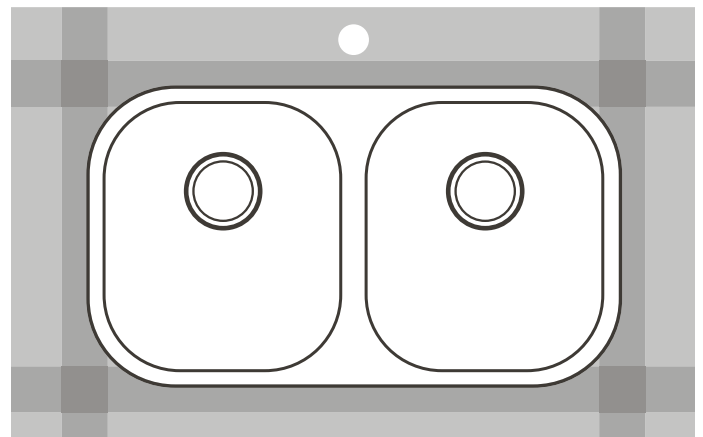
3CM (1 1/4")

Less than 16"	<i>No additional support required</i>
16"-24"	<i>Brackets required every 24"</i>
Over 24"	<i>Legs Columns or Panels required every 24"</i>

- All supports (brackets, legs, columns or panels) must be securely fastened to adjoining structures to provide the required support. Vadara material is heavy and can cause serious accident or injury if not properly supported.
- Allow for expansion, a minimum 1/8" expansion joint should be provided at each wall.
- When attaching Vadara to any support structure only use a flexible 100% silicone. Place dabs of silicone 8-12" apart and provide additional adhesive at all joints and cutout locations.
- Never attach mechanical fasteners directly into the material. Through bolting is permitted.

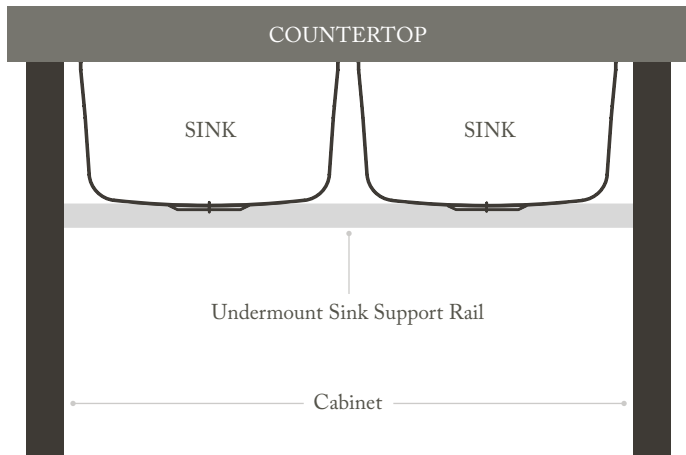
Sink Installation

- Follow sink manufacturer recommendations for installing Undermount or top mount sinks and basins.
- Follow all recommendations contained in this manual for sink and basin installations.
- For Undermount installations we recommend a minimum of 1/8" radius around the cutout edge to reduce the risk of chipping. Our preferred edge is a 1/8" bevel or 1/8" pencil round edge.
- On basin installations where the faucet hole is located in the countertop make sure sufficient material remains for strength and support. Ensure that enough distance exists from the faucet to the wall to allow complete operation of faucet.
- All sink cutouts must be made using drilled radius corners (min. 3/8") to prevent stress points in the countertop.
- We recommend that all sink installations be fully supported independent of the countertop. Use a support rail system with front to back support strips of 2.5" wide to coincide with cutouts. Support must be provided under all countertop joints.



Horizontal or Vertical support rails

Sink Installation (continued)



- Do not install any mechanical fasteners directly into the Vadara material.
- All Undermount sink cutouts must be finished to the factory surface finish.
- All Undermount sinks should be sealed to the countertop using 100% silicone.

Completion

If additional construction is continuing after the installation of the countertops ensure that all Vadara surfaces are adequately protected by covering them with cardboard or other protective material.

Notify the appropriate individuals advising them that the countertops as a work area, step stool or standing platform. Also any trades that are using solvents, chemicals or adhesives should take care to avoid any spills and/or remove any spills immediately.

We suggest a customer sign off after completion to protect you against any damage caused by others.

Use and Care

Vadara surfaces will provide years of exceptional appearance and durability with ease of maintenance. Vadara surfaces are easy to clean and care for. In many cases soap and water or a mild detergent are all that are required to maintain your surface. If required, apply common non-abrasive cleansers such as Soft Scrub® Liquid Gel with Bleach or Comet Soft Cleanser Cream with Bleach directly on a damp cloth or sponge and wipe the surface, rinsing the surface thoroughly after cleaning.

- Use a circular motion when using any cleaning agents, thoroughly rinse the surface and dry with a clean cloth. Avoid any cleaning agents that have a pH level above 8 such as oven or grill cleaner since they may damage or etch the surface.
- If necessary to remove adhered materials such as gum, food or nail polish, scrape away the excessive material first using a plastic putty knife then clean as recommended above using a damp sponge or cloth to remove any residual left behind.
- Do not cut directly on your Vadara countertops since this will dull your knives rapidly and the knives will leave behind “metal marks”. These marks can be removed using the cleaning practices described above and are not considered damage to the material.
- Vadara surfaces can withstand moderately hot temperatures for brief periods of time, however prolonged exposure to high heat may cause discoloration or other damage. Avoid direct contact between hot pots and pans and the Vadara surface. Excessive localized heat may cause damage to the surface or cause hairline cracks to appear. Use of a hot pad/ trivet is required when using portable cooking units such as electric frying pans, woks, kettles, slow cookers.
- Vadara is an extremely durable material and makes an ideal work surface for both residential and commercial projects. However, it is not indestructible. Vadara can be damaged by strong chemicals or solvents that affect its physical properties. Do not expose the surface to trichloroethane or methylene chloride commonly found in paint strippers or removers. Should the surface be exposed to these materials rinse and clean the surface immediately.
- Avoid any aggressive cleaning agents with a pH over 8 such as oven/grill cleaners. Products with oils may leave a residue and should be rinsed and cleaned immediately.
- Register your warranty at: www.vadaraquartz.com

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