

Spectrum*Stone*TM

by Ice*Stone*

FABRICATION GUIDE

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Safety

EXPOSURE TO CRYSTALLINE SILICA DUST

SpectrumStone slabs are not hazardous as shipped and used by the end user. However, SpectrumStone is made of 30% Quartz which contains crystalline silica and fabrication processes (such as cutting, drilling, grinding, polishing, etc.) generate dust with respirable size particles. Uncontrolled exposure to respirable crystalline silica dust is dangerous to your health and prolonged, unprotected exposure can cause serious illnesses such as, silicosis, lung cancer, fibrosis of the lungs, tuberculosis, kidney diseases, abrasion of the cornea, and irritation of the skin and eyes.

Wherever SpectrumStone is fabricated and processed, a silica control program **MUST** be in place in accordance with all applicable laws, regulations, orders and directives. In addition to the precautions listed in this guide, fabricators and installers of SpectrumStone **MUST** also become familiar with the requirements laid out by the Occupational Health and Safety Administration's (OSHA) National Emphasis Program for Crystalline Silica as well as the European Network on Silica's (NEPSI) Good Practice Guide for the handling of silica.

Visit www.osha.gov and <http://nepsi.eu> for more information.

Proposition 65 WARNING: This product contains crystalline silica, a material known to the state of California to cause cancer.

Preventative Measures

In addition to any other applicable safety measures, the preventative measures below must be followed to ensure employee's safety:

- Access to the work area must be restricted to authorized personnel only. "Hazardous Dust" signs should be posted when an area is at risk.
- Wear a suitable dust mask in all areas displaying a "Hazardous Dust" sign.
- Always use wet tools to prevent airborne dust particles.
- Ensure that the workplace (including both the fabrication facilities as well as any adjacent offices) have adequate general ventilation.
- Emissions from dust extraction systems must comply with all local environmental legislation.
- Implement proper ventilation and filtration systems to control dust. Check at least once a week to ensure the system is functioning correctly.
- Clean the equipment and the work place daily using wet or vacuum cleaning methods. Avoid cleaning with a dry brush or using compressed air as these methods can raise dust, boosting exposure to very high levels.
- Clean clothes should be stored separately from work clothing.
- Do not clean overalls with compressed air.
- Remove work clothes and wash hands and face before eating.
- Do not smoke inside the facility.

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Introduction



SpectrumStone recycled glass slabs are made of 60% recycled glass, 30% quartz, 10% resin, and strength enhancing ingredients, with glass being the main ingredient by weight.

The beauty of SpectrumStone are the wonderful colors of recycled glass that are used to make each slab. By choosing SpectrumStone surfaces, you not only add a unique and visually stunning element to your kitchen or vanity; you also help to clean up the environment. That's because every slab in the SpectrumStone's palette is made up of 100% recycled glass that is removed or diverted from landfills or factories.

SpectrumStone's slabs can be cut, polished, patched, and sealed much the same way as marble, granite, or most quartz surfaces.

** This fabrication guide is not intended for beginner fabricators*

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Spectrum*Stone*TM

Disclaimer

This fabrication manual is intended for experienced fabricators of the marble/granite/engineered stone industry.

Any variation in color, glass distribution, thickness, surface finish, etc. between the samples or printed material and the actual slabs is an inherent property of SpectrumStone surfaces due to the fact that part of the factory process to produce these slabs are manual. SpectrumStone will not accept any responsibility for this variation. For general tolerances please refer to the Marble Institute of America (MIA), www.marble-institute.com, guidelines available online or on literature.

SpectrumStone will not accept any returns on installed material for claims involving any variation mentioned above. All slabs are to be inspected upon receipt and SpectrumStone is to be notified immediately of any breakage, damage, or inconsistent color between slabs. Slabs that are cut or altered from its original state are deemed accepted and are not refundable or subject for return.

It is the responsibility of the fabricator and/or distributor to make sure that this disclaimer is clearly explained to the customer, along with the tolerances and acceptable variations.

Samples provided by SpectrumStone are only intended to provide the fabricator, distributor, and customer with the general color pattern of slabs. They do not serve any other purpose.

It is the responsibility of the fabricator, distributor, or customer to make sure that adequate quantity slabs of a particular color are available prior to beginning a job with SpectrumStone slabs.

Inspection

SpectrumStone slabs are manufactured in a unique way, without the need for batch numbers. All of our slabs have an ID barcode tag with the manufacturing date and sequence. While our process strives to ensure color uniformity for each color, the exact glass dispersion and concentration may vary between slabs. The fabricator, distributor, or customer needs to perform the inspection prior to altering the slab in any way.

Upon receiving the slabs, the fabricator/distributor/customer must carefully inspect the slabs for any irregularity and must notify SpectrumStone right away in the event of any irregularity.

It is the responsibility of the fabricator, distributor, or customer to ensure that the slabs match for projects requiring multiple slabs.

Once the slab is altered from its original state (including altering the surface finish), SpectrumStone will consider the slabs to be accepted and will not accept any claim for return or refund. We will not accept any claims for installed finished products.

Handling and Storage

- One of the most important activities related to working with SpectrumStone is the handling of the slabs and the finished product.
- Slabs should be handled as if they were a marble or delicate exotic granite. It is strongly recommended that slabs be lifted and moved with nylon slings with a minimum “basket” capacity of 2,000 lbs. Always use protective sleeves at locations where the slings come into contact with sharp edges of slabs.
- Clamp lifters may also be used to lift and move the slabs around. The clamps should be specifically made for lifting stone slabs and should have white rubber padding in order to avoid any black marks from the tight grip. Always make sure that the clamp is positioned in the center of the slab to avoid any unbalanced movement of the slab upon lifting.
- Vacuum lifting equipment should only be used to move around finished product, and not entire slabs.
- Always store slabs vertically on A-frames or slab racks that are suitable for slabs. Make sure that the vertical beams of the A-frames are on the same plane. It is important to make sure that the bottom of the slabs completely touch the bottom of the slabs behind along the entire length. The same for the top of the slabs. This is to ensure that the entire plane of the slab is resting on the plane of the slab behind. If any adjustments need to be made to ensure this, you can use the clamp to re-position the slab or you can use a wooden board to gently move the corners of the slabs to each other.
- Always store slabs indoors. Store in a manner so that the polished face is not exposed to the sun.
- Move finished product with clamp lifters or nylon slings. Transport finished product on heavy duty single or double-sided transport racks with rubber padding on bottom pads and uprights. Secure with rubber padded steel uprights that are latched to top of rack. Groves Incorporated (www.groves.com) is an acceptable manufacturer of racks.

!Outdoor installation for SpectrumStone is NOT recommended and will void the warranty.

Templating & Layout

- Templating for SpectrumStone surfaces is similar to templating for marble, granite, or engineered stone. Either electronic templating or plastic templating are acceptable.
- Layout of the countertop is extremely important. The final customer needs to approve the layout of the countertop/vanity top prior to commencing any work on the slab(s). The location of the seams needs to be approved by the final customer as well.
- Please follow our guidelines in the **Rodding and Reinforcing** page for layouts that require reinforcing. SpectrumStone will not accept any claims for breakage or damage to the material if the instructions on the **Rodding and Reinforcing** page are not followed.
- Before installing the countertop, make sure you dry fit the top in the shop to make sure everything fits correctly. **This is a crucial procedure to make sure there are no surprises at the installation site.**

Cutting

PROPER PROTECTIVE EQUIPMENT AND ALL OSHA GUIDELINES MUST BE USED AND IMPLEMENTED PRIOR TO CUTTING SPECTRUMSTONE - SEE PAGE 2



- For best results use granite or quartz cutting blades.
- Always use a bridge saw to cut the slabs into the countertop dimensions. Ensure that all cutting equipment is in good, safe working condition.
- You can cut the slabs in one pass. However, for best results, you can cut the depth of the slab in 2 passes. The first pass should cut about $7/8$ deep. The second pass should be performed on the return stroke of the bridge saw (i.e. - the blade should make the second pass moving backwards through the piece). The return pass should be much slower than the first pass and the blade should cut approximately $3/8$ deeper into the wood table of the saw. This will reduce chipping of the bottom edge of the slab to a minimum.
- When cutting by hand with a hand grinder, always use diamond blades for granite or quartz. You can dry cut. Always make sure you wear proper personal protection equipment (safety glasses, proper respiratory mask, gloves, etc.). If you wet cut, ALWAYS make sure that you use GFCI protected equipment.
- Please follow the cutting guidelines as per the Marble Institute of America manual (MIA).

Cutting in 2 Passes

1st pass



- For best results, cut the depth of the slab in 2 passes.
- Cut about 7/8" of the thickness of the slab on the first cut. The diamond segments should be running downwards into the slab. Maintain a steady, moderate speed. Always use water.

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SpectrumStone™

Cutting in 2 Passes

2nd pass



- Cut the approximately $\frac{3}{8}$ deeper than the slab with the diamond segments running upwards into the slab (i.e. - return stroke on the bridge saw). This pass should be slower than the first pass. Always use water.

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SpectrumStone™

Drilling

- Faucet hole drilling can be performed the same way as with marble and granite surfaces.
- Using wet diamond core bits, apply constant moderate pressure to obtain a smooth hole all the way through the slab. Ensure that the slab being drilled or cored is supported on an even flat surface to minimize blowout.
- In rare cases where no blowout is accepted on the unfinished surface of the slab, the hole must be cored halfway through the polished surface and the other half needs to be cored out from the bottom surface
- Profiling edges with a router or cnc machine is done the same way as with natural stone, granite, or quartz. The only recommendation is to use bits with continuous diamond bits to keep any chipping at a minimum. All edges that are finished on natural stone and granite (ogee, rounded, bullnose, etc.) can be also finished on SpectrumStone.

Rodding and Reinforcing

- It is mandatory to support in front and behind all sink cutouts if the distance from sink cutout edge to finished edge is less than 4". In the case of overhangs greater than 16" from cabinet edges, bracket supports are needed at 24" intervals. An acceptable alternative for overhangs is placement of corbels every 2 feet on center as supports, ending no more than 2" from the outer edge of the countertop.
- Overhangs greater than 24" require legs or columns at 24" intervals.
- Any distance between the edge of a sink cutout and the finished edge of SpectrumStone that is less than 4" needs to be rodded. Rodding can be performed using 3/8" high x 1/8" thick steel or fiberglass rods. These need to be buried in kerfs created on the underside of the piece and filled with epoxy or polyester knife grade mastic, the same way as is done with marble and granite. An acceptable guideline is a 1/4" wide kerf that is 1/2" - 5/8" deep.
- Front to back supports within the cabinet should be every 24". All countertop joints must be supported.
- L-shaped layouts or any layout with small protruding elements where the width of the material is less than 4" are not acceptable, even with reinforcement (see sketch below).
- Never affix mechanical fasteners directly onto a SpectrumStone slab.

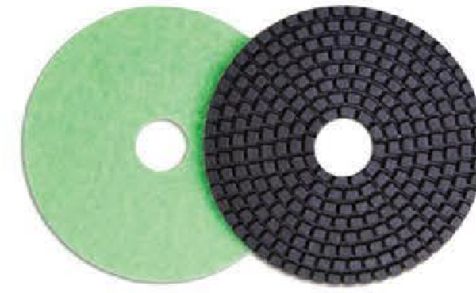


- Undermount sinks may be installed in the same way as with natural stone, granite, or engineered stone. Use silicone to adhere the sink edge to the back of the cut material, along with clips to secure the sink to the threaded anchor embedded into the material.

Seams

- Seams are a very important element of the finished product. Please use the MIA (Marble Institute of America) as a guideline for seaming tolerances for countertops.
- It is important to have the final customer approve the location and layout of the seams prior to cutting the slab(s).
- The tiny gap of the seam needs to be filled with a clear epoxy or polyester resin and may be colored to match the color of the adjoining material. The edges of the seam need to be covered with tape to prevent any excess resin from spilling over to the actual countertop. If any spilling occurs, make sure to remove the excess resin with a sharp edge or razor blade while it is still curing.
- Seams of the countertop need to be in locations that align with the seams of the cabinets below.
- Prior to installation, make sure that the cabinets are installed correctly and that they are level and on a true plane. Any countertop installed on cabinets that are not on a true plane may break.
- Allow about 1/8" (3 mm) gap between the edge of the countertop and the wall to make sure there is adequate space for any contraction by the countertop over time.

Edge Polishing



- SpectrumStone edges are polished the same way as marble granite, or quartz edges, using diamond pads and water. DO NOT apply wax to SpectrumStone, as this will dull the glass and reduce the quality of the polish.
- The recommended polishing sequence is the following, by grit: 50, 100, 200, 400, 800, 1500, 3000, buffing pad

Patching

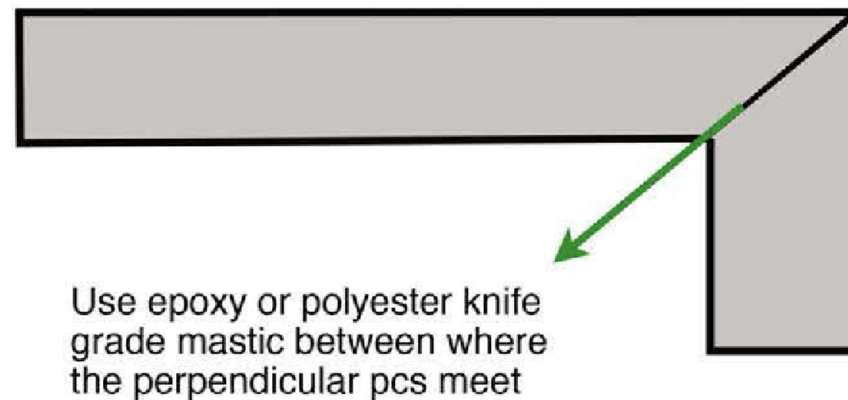
- Due to the nature of the product, glass chipping may occasionally occur when cutting SpectrumStone slabs. Should this occur, no worries. You can patch the voids with either clear epoxy glue, clear polyester mastic, or white cement. Knife Grade Polyester mastic is an easy patching material if the voids are small because it can be spread easily and because it is the easiest to color match with the SpectrumStone slab color. For best results, Plexus UV Stone Repair Kit can be used, as the patching will be transparent.
- If an epoxy or polyester mastic is used as patching, use only resins that are neutral or clear in color and that can be colored. You have a choice of coloring the resin to match the color of glass in the material or to leave the resin clear. It is up to the fabricator's discretion to decide which patching material will give an acceptable visual result. Apply the selected resin with a spatula until the void is filled completely. Shave off any excess resin with a razor blade after it is cured.
- If you are patching an edge with epoxy or polyester resin, bring the edge polish to an 800 grit. Apply the desired resin compound (clear or colored, at fabricator's discretion) with a spatula or razor blade until the void is completely filled. Once the resin has cured, continue the polishing process with the higher grits (1,500, 2000, 3000) until the desired polish is reached.

Note: Always test the patching options on a scrap piece to determine which one will work best visually. It is up to the fabricator's discretion to determine which method will work best on a particular job.

Laminating and Miter Cuts

- Laminating SpectrumStone is not recommended, since the glass configuration on its surface may not be the same as the cross section (edge in this case). It is entirely at the fabricator's discretion to provide a laminated finish and to ensure that the customer approves the visual result.
- Miter cuts may be diagonally reinforced with stainless steel pins after being epoxied to the adjacent piece. The same procedure as with natural stone or granite may be used. Please follow the MIA (Marble Institute of America) guidelines. Once again, it is entirely at the fabricator's discretion whether or not to provide a mitered finish and to ensure the customer approves the visual result.

Note: Always test lamination or miter cut results on a scrap piece to determine the result.



Sealing

- SpectrumStone resin based slabs require no sealing and no waxing.

Heat Sources in Kitchen Areas

- SpectrumStone surfaces are not recommended for areas directly above or below heat sources, even though our material is heat resistant. Make sure that in the unlikely event that SpectrumStone is installed above a hot item, there is adequate insulation between it and the heated item. The insulation must be fire proof and must not be flammable.
- Do not install SpectrumStone in areas with large, rapid temperature fluctuations (alternating chilled/hot conditions in short intervals). As with all natural stone and engineered stone, extreme rapid temperature changes are not recommended.
- Avoid direct contact between SpectrumStone and hot pots. Please use hot pads or insulators between hot pots and SpectrumStone.

Basic Maintenance

- Day to day cleaning of SpectrumStone requires only a damp cloth, sponge or paper towel. We recommend warm water and a non-abrasive cleanser.
- Mild soap and water is the best option. For best results clean any food or liquid spills promptly. SpectrumStone is stain resistant, but not stain proof.
- Certain materials used near or on your SpectrumStone surface may cause stains including, but not limited to turmeric, sharpies and purple primer.
- Use extra caution with such items on or near your SpectrumStone surface. For dried spills, a non-abrasive scrub pad with a mild cleanser such as Simple Green All Purpose Cleaner or Formula 409 should remove the foreign material.
- While SpectrumStone is normally able to resist most household chemicals, avoid products containing bleach or ammonia. If such products come in contact with your SpectrumStone surface, immediately flush with water and then clean thoroughly with a diluted vinegar and water solution.
- If a stain results, you can remove it using water with a mild soap or detergent or you can contact the installer of your SpectrumStone surface.

Safety Reminder

*PROPER PROTECTIVE EQUIPMENT MUST BE USED AND IMPLEMENTED PRIOR TO CUTTING SPECTRUMSTONE - SEE PAGE 2

Please make sure you follow all applicable OSHA, local, state, and federal regulations regarding personal protection and workplace safety when working with SpectrumStone. All fabricators and workers involved in the handling, storing, fabrication, installation, and maintenance of all SpectrumStone products are required to comply with all OSHA regulations, along with applicable local, state, and federal laws and regulations regarding safety.

Some of the most relevant safety issues are:

- personal protection equipment (safety eyewear, dust inhalation protection, gloves, etc.)
- adequate and lawful disposal of waste.
- use of safe and adequate working equipment (grinders, bridge saws, blades)
- safety precautions when handling the material using heavy machinery (cranes, forklifts, etc.)
- use of safe and adequate handling equipment (cranes, slings, clamps, etc.).
- read all safety and application instructions on manuals of materials used with SpectrumStone (sealers, cleaners, tints, etc.).

Contact

If you have any questions about SpectrumStone please contact our office.

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Email: customerservice@icestoneusa.com

www.icestoneusa.com/spectrum-stone

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