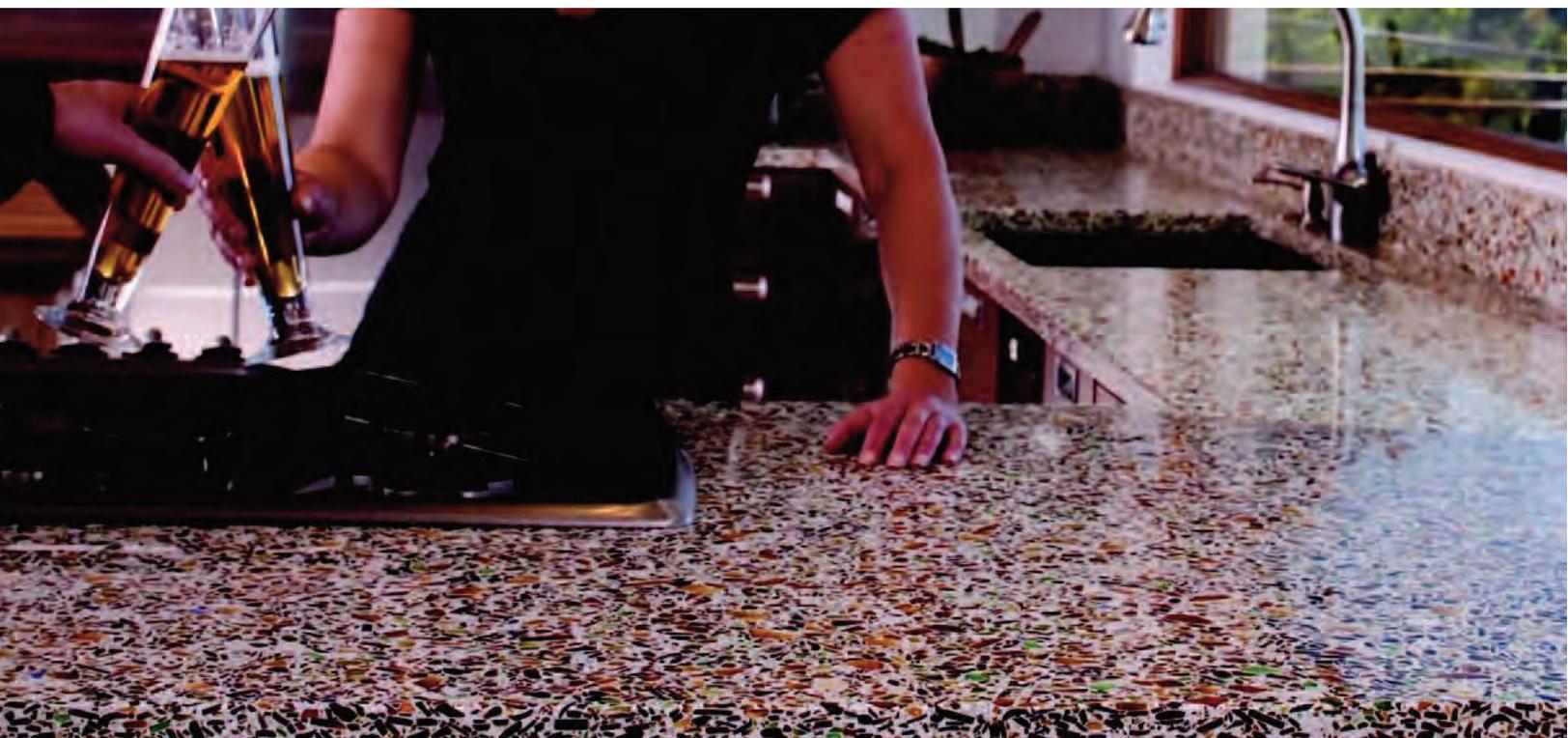


Photography by Joel Puljatti, pullartphoto@yahoo.com



what do you see?

recycled glass [from traffic lights, windows, beverage containers and many other unique sources]
transformed into exquisite surfaces [for countertops, tabletops, vanities, mantles and more]



Fabrication & Installation Guide

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This guide is intended for use by Certified Vetrazzo Fabricators and Installers as a reference. The guidelines incorporated herein, including references to third-party publications, must be adhered to in order for any product warranty to be valid. Any deviation from these procedures must be approved in writing by Vetrazzo, LLC prior to commencement.

The Fabricator / Installer must be a trained employee or agent of a Vetrazzo Certified Fabricator.

Updates to this guide will be issued periodically.

Vetrazzo® Recycled Glass Surfaces
Manufactured by Vetrazzo, LLC

Email: tech@vetrazzo.com

Website: www.vetrazzo.com

Trade Information: http://www.vetrazzo.com/products_partners.html

Vetrazzo, LLC

Ford Point, Suite 1400
1414 Harbour Way South
Richmond, CA 94804

Phone: (510) 234-5550

Fax: (510) 234-7890

Congratulations! You have been invited to become a Certified Vetrazzo® Fabricator & Installer.

Adoption of the Marble Institute of America Fabrication Standards

You were selected to join the growing network of Certified Vetrazzo Fabricators because of your reputation as a stone fabrication professional. At Vetrazzo, we respect the skill and experience necessary to achieve that reputation and, as a result, have adopted the Fabrication and Installation Guidelines of the Marble Institute of America, as stated in the MIA's Dimension Stone Design Manual (version 6) and the Technical Module for Residential Stone Countertop Installation (rev. 2005). Where applicable, references to Granite should be followed over other stone types.

While granite fabrication guidelines are to be followed, every material has unique attributes that warrant practice prior to completion of the first customer job. Vetrazzo is no exception. Specific techniques, tooling recommendations and maintenance protocols are discussed later in this guidebook.

Always feel free to contact Vetrazzo with questions or comments by emailing tech@vetrazzo.com.

Levels of Vetrazzo Fabrication Certification

We offer two levels of Certification to qualified fabricators.

1. Vetrazzo Certified Fabricator

Achieved by demonstrating sufficient knowledge and skill. Candidates must successfully complete the "hands-on" aptitude kit. This test covers shaping, edge finishing, chip repair/color matching and the option for application of the "patina," an acid stain.

2. Vetrazzo Master Fabricator

Awarded to outstanding fabricators that have achieved excellence in *50 or more Vetrazzo installations*.

Upon becoming a Certified Vetrazzo Fabricator your contact information will become part of our database of Certified Fabricators and will also be distributed to your local Vetrazzo Retailers and Distributors so that they may refer work to you. Master Fabricators will receive top positioning in all referral programs.

Fabricators that pass the certification process and have a Vetrazzo installation in their showroom will be eligible for listing on the Vetrazzo website.

An Introduction to Vetrazzo

Vetrazzo transforms recycled glass into exquisite, one-of-a-kind surfaces that showcase unique design and appreciation of the earth and its limited resources.

Vetrazzo surfaces are:

- Fabulous for countertops, vanities, tabletops and islands
- Composed of up to 85% recycled materials (wow!)
- Manufactured proudly in the U.S. by passionate, experienced craftspeople

The glass is thoroughly mixed throughout the full slab thickness. Polished edges reveal more gorgeous dimensions of glass.

Vetrazzo uses 100% recycled glass including both post-consumer and post-industrial sources such as beverage bottles and containers, glassware, windows, windshields, optical lenses, traffic light lenses and a variety of other fascinating sources. There is, quite literally, a ***Story in Every Surface™***.

Applications

Vetrazzo can be used in a variety of commercial and residential applications; most common applications include:

- countertops
- bar tops
- hearths / fireplace surrounds
- tub decks
- shower surrounds
- tables and desks
- islands
- vanities

Product Dimensions

Vetrazzo is manufactured in 9' X 5' X 1.25" (approx. 3 cm) panels weighing approximately 700 pounds. Vetrazzo weighs approximately 14.6 lbs/sq. ft.

Tolerances

Joint (seam) Widths	Between two panels the joint should be 1/16" with a tolerance of $\pm 1/64$ " for a typical countertop application.
Lippage	Maximum permissible height difference should be 1/32" limited to the center, front to back. The front planes need to align visually, the rear planes need to align enough to allow for successful backsplash installation.
Panel Thickness	Variance should be limited to 1/8" for slabs used in the same project.
Panel Flatness	Individual panels should be within 1/16" flatness when measured with a 4.0' straight edge.

Handling & Storage

Please inspect all panels for cracks prior to lifting. Damage may have occurred during transportation. Always use caution when moving panels.

Vetrazzo can be handled with the same equipment used for natural stone or engineered stone (quartz) slabs of a comparable size and weight.

Protect Vetrazzo panels from scratching or damage when placing on A-frames. Carpet or foam works well for padding under strapping and clamps. Protect material from flexing by providing proper support. Always adhere to OSHA guidelines.

Record serial numbers from panels when they arrive at the shop for fabrication. You will use this information when you register the Vetrazzo for your customer online at www.vetrazzo.com.



The required serial numbers, the letters and digits on the edge of the Vetrazzo panel, are pictured at left.

By registering the Vetrazzo, you activate the warranty for your customer; you initiate the creation of the official Certificate of Transformation for your customer, and the job counts towards the 50 completed projects necessary for achieving master fabrication status. The Certificate of Transformation will be provided to your customer by Vetrazzo to convey the unique story of the source of the specific recycled glass in their Vetrazzo surface.

Installation & Layout Considerations

Every panel of Vetrazzo is unique. Variations in the pattern and distribution of glass are an inherent part of its beauty. While every effort is made to ensure visual and color consistency between panels, no assurances can be made due to the changing nature of recycled glass supply.

As glass variations are greater between batches, materials throughout an installation should be from the same batch and should bear labels with same batch number to improve color consistency.

- Visually inspect materials to be used for adjacent pieces to assure acceptable color match.
- Inspect in lighting conditions similar to those at the installation site.
- It is in the best interest of the fabricator to have client approve layout prior to cutting.

Dry fit pieces in shop to reduce work on site. Use care to protect the finished edges and surface when transporting and installing. Keep the surfaces free from grit and use padding under straps and clamps.

Color Matching

Because of the unique nature of Vetrazzo and our glass sources, no two panels are exactly the same. While we endeavor to manufacture product as consistent as possible, Vetrazzo will exhibit variations in color, shade, glass size and glass particle distribution.

This is part of the inherent character and beauty of mixing post consumer and/or post-industrial recycled glass. These variations are not structural; however consideration should be given when planning the layout. Matching glass distribution and color at seams will yield the best results. We recommend multi-panel jobs be purchased from the same Production Lot number. **Please remember to always write down the Panel ID!**

Fabrication Techniques & Tools

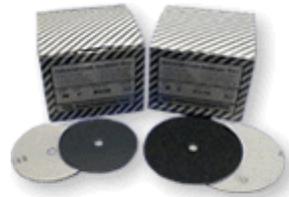
Fabrication equipment and tools used for granite fabrication, such as CNC machines and gantry saws may be used to fabricate Vetrazzo panels.

Diamond saw blades and drill bits are strongly recommended and will yield the best results.

As with all materials, avoid stress fractures by using a radius on inside corners when possible.

Every shop will have different equipment; experiment with speed, feed rate, diamond cutting blade size and type to determine what works best with your specific equipment. Too aggressive an approach may cause excessive dislodging and chipping of glass along the cut edge. Inspect cutting tools frequently to ensure the highest quality results.

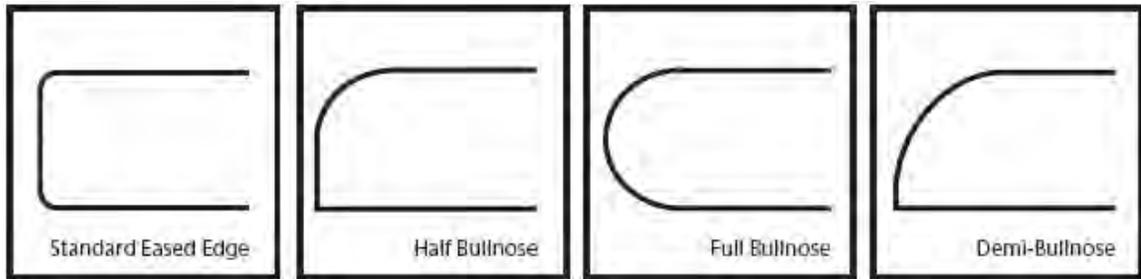
Diamond pads are recommended for grinding and polishing. 50 grit pads should be used to remove cutting marks, deep scratches and minor shaping. If working wet, squeegee regularly to inspect and evaluate progress. Proceed to the next grit levels: 100, 200, 400, 800, 1500, 2000, ending with 3000 for the full gloss factory finish. We recommend Braxton-Bragg and Alpha products.



Edging

The profile edge of Vetrazzo offers another view of the incorporated glass; the cross section has its own inherent beauty. Simple edge treatments best showcase this unique perspective. While you may choose to provide a more complex or elaborate edge profile, be aware that sharper edges are more prone to chipping and dislodging of glass. **We recommend a minimum 3/16" edge radius.**

Vetrazzo does not warranty glass chipping or dislodging. Edges are the responsibility of the fabricator.



For the best results, shape edge and polish to 120 grit. Color match epoxy/polyester resin fill and apply to any void or glass blow out. After the fill cures, proceed with final polish. Patina if necessary, see page 9 for more information.

If a piece of glass dislodges during edge polishing, reattach it with a knife grade tintable polyester resin. We recommend AKEMI Platinum, 2 part, clear knife grade. If the glass is not recoverable, tint the clear polyester resin using manufacturer's recommended pigments to re-create the dominant color.



AKEMI®

Color matching will determine the success of the overall installation. Use a razor blade to remove excess resin, let fully cure and buff to match surrounding finish. Follow manufacturer's directions and recommendations with polyester resins, epoxies and tints.

Laminating

Vetrazzo can be laminated by stacked or mitered techniques. Always cut the material to be laminated from the same panel. When using the stacking technique, observe a 3 layer limit for a total width of 3/4" (3.75") inches. Occasionally milling may be necessary to remove the bottom surface of the panel that doesn't appear to contain glass. Standard stone techniques are used to create mitered edges.

Prepare the surface for adhesion by using a diamond cup wheel to score the surfaces. Thoroughly remove any dust before adhering. After applying adhesive, clamp every 4"-6" inches.

Aprons and skirting add significant weight, additional attachment methods will be necessary. For example, an apron longer than 4" needs "L" brackets every 8"-10" countersunk and glued in place.

Laminations and seams are fabrication techniques and are not covered by the Vetrazzo warranty. The strength and appearance of laminations and seams are not covered as both are dependant upon the skill of the fabricator and not the material itself. The Vetrazzo warranty covers the material only.

Seam Filler

Polyester resins are recommended for seam filling. Tint polyester resins (glue) to achieve proper color matching.

Installer should tape each side of the seam to avoid “shadowing”- discoloration of surface caused by unwanted glue absorption. Razor off the excess glue while it is still workable. Remove tape before the epoxy hardens and razor off any excess.

Sink Reinforcement

Top mount and/or undermount sinks may be used. Undermount sinks can be mounted using standard stone practices. If the material span in front of the sink is less than 4”, it should be reinforced by insertion of an I-rod or other accepted strengthening practices.

Other Reinforcement

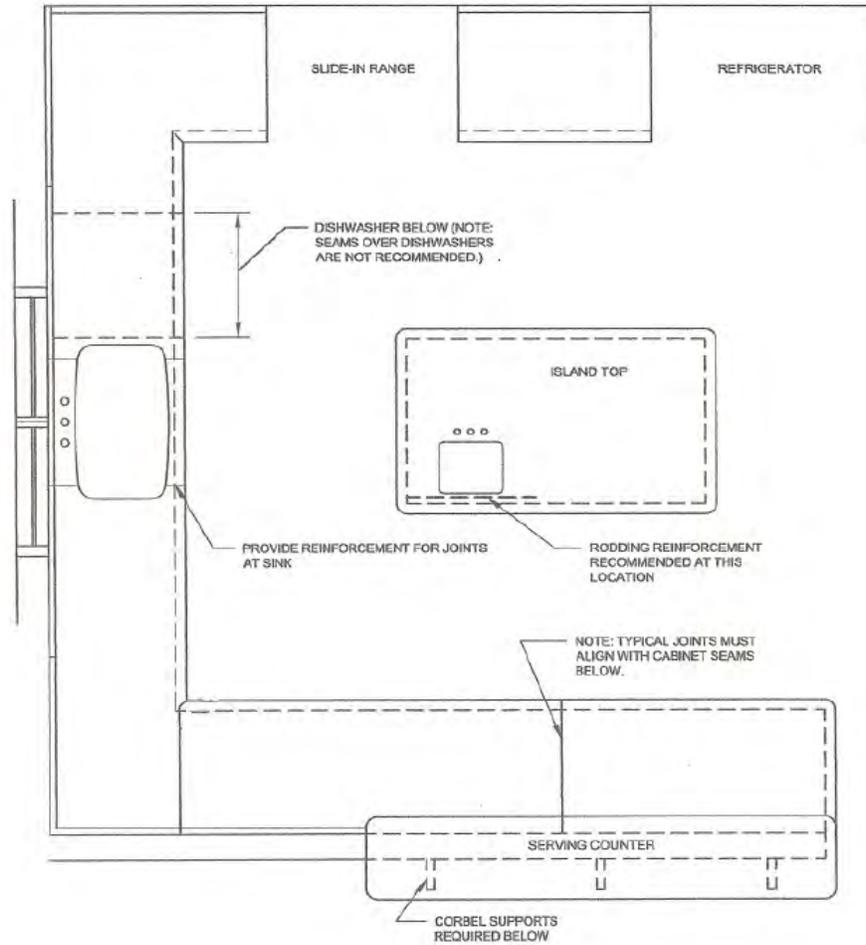
Fiberglass Mesh. An optional practice to reduce the possibility of breakage is to adhere a fiberglass mesh to the back surface of the panel. This would be applied immediately following the sawing of the panel. An epoxy or polyester resin may be used.

Splines. Seams, particularly between narrow sections of the panel, may be splined together with a steel or stainless 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 panel, similar to the “biscuit” joint reinforcements used in woodworking. **See the drawings on pages 8 - 9 regarding reinforcement.**

Spans & Cantilevers

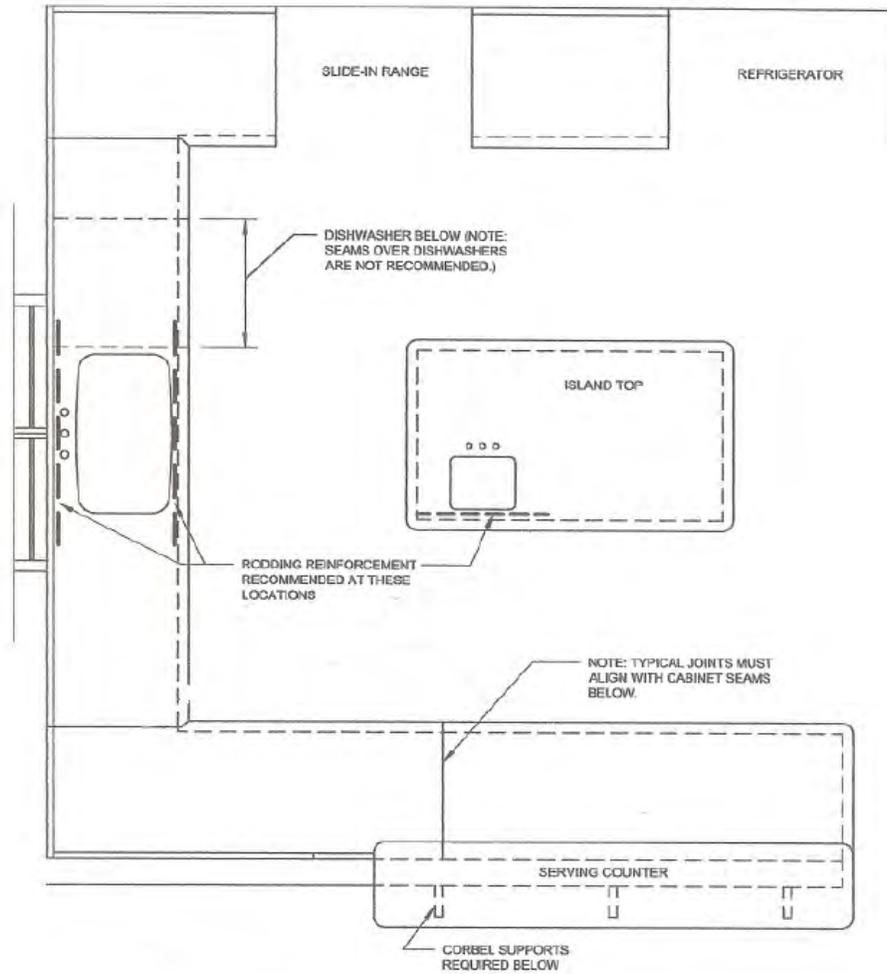
- Spanning between two supports shall be limited to 2’0” with rodding
- Cantilevers 10” or longer require corbels,
- Corbels must be installed a minimum of 18” on center
- Corbel length must support cantilever distance within 2” of overall length

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**TYPICAL KITCHEN LAYOUT
(WITH JOINTS AT SINK)**

Vetrazzo Fabrication & Installation Guide



TYPICAL KITCHEN LAYOUT
(WITH JOINTS AT CORNERS
IN LIEU OF SINK)

Patina (Stain)

This technique is common in the cement industry. It is a surface treatment applied to the face of the panel at the Vetrazzo plant at the final stage of manufacturing. Cut edges will appear white. You will need to apply Lithochrome Chemstain Classic CS-1 Black to the edges in effort to match the factory surface. Please follow the steps listed.

Vetrazzo slabs are available with a “patina”; surface color added by applying an acid stain. This simple technique increases the material’s aesthetic flexibility. Visit vetrazzo.com to see examples.

THE APPLICATION OF PATINA MUST BE DONE IN THE EXACT ORDER AS DETAILED IN THE STEPS BELOW.

Steps for Success in Patina Application for Vetrazzo

- 1) Inspect panel(s) upon delivery. Do not work on unacceptable material!
- 2) Layouts should be done with the idea that each panel of Vetrazzo is unique, much like you would template natural stone. Patina maintains a mottled effect instead of a flat black appearance. This may affect the overall project, especially when pieces are seamed; piece together carefully. Avoid areas that may have uneven glass distribution or a cosmetic scar in the focal points. Patinaed panels are treated only on the surface, cutouts and edges will be white.
- 3) **Cut-outs and edges should be shaped and polished to 120 grit sand paper. We recommend Alpha sandpaper.**
- 4) **After completing the polish, use compressed air to thoroughly clean the surface.**
- 5) **All fill work is done at this time. Carefully mix fill to match the dominant color. Keep in mind the hardener is white and will influence the final color.**
- 6) **After the fill has cured, polish to 600 grit. If polishing wet, take to 3,000 grit. Remove all excess fill at this time. Edge shine should match the top.**
- 7) Pour the patina, Lithochrome Chemstain Classic, CS-1 Black, into a separate container. Use gloves and eye protection. Do not pour patina back into the original container. Never pour patina directly on to a panel. Purchase Lithochrome Chemstain Classic, CS-1 Black from Scofield at <http://sales.scofield.com:8691/StockingDistributors/DistributorSearch.aspx>.
- 8) Paint on patina with roller or brush. Patina starts out yellow/brown and darkens as it reacts; it will not look flat black. Coat one direction and let set 10 minutes, re- roll opposite direction and let sit for 4 hours. After 4 hours it may be tacky.
- 9) Neutralize with water, rinse until clean. Survey color match, if patina is not dark enough, reapply to match surface. If it looks too dark or the glass appears cloudy, continue to wash off patina. Check complete removal by wiping the surface with a clean cloth, it should not pick up any color.
- 10) If it’s colder than 55 degrees, allow patina to remain on the surface for a longer period. Avoid applying patina in direct sunlight.

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- 11) Seal all edges, cut outs and surface with an impregnating sealer i.e.: Stonetech Impregnator Pro.
- 12) The final step, best completed after installation, is application of a protective layer of wax or polish. Goddard's Marble and Granite Polish works well.

Vetrazzo uses Lithochrome Chemstain Classic, CS-1 Black. Use the same brand in your fabrication shop to ensure color consistency.

Keep work areas clean and deal with spills immediately to avoid contamination of other materials. Follow all manufacturers' recommendations, including worker safety.

As mentioned above, we use Lithochrome Chemstain Classic, CS- 1 Black, guidelines can be found at: www.scofield.com/stepguide_chemstain05.html.

Purchase Lithochrome Chemstain Classic, CS-1 Black from Scofield:

<http://sales.scofield.com:8691/StockingDistributors/DistributorSearch.aspx>. Select product group, "Decorative Concrete Stain" and search by state and city to find the nearest distributor.



Vetrazzo™ Steps for Polished Edge Patina

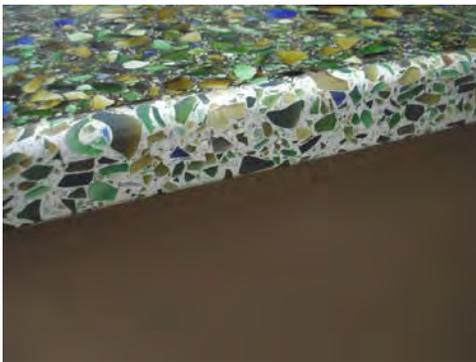


Figure 1

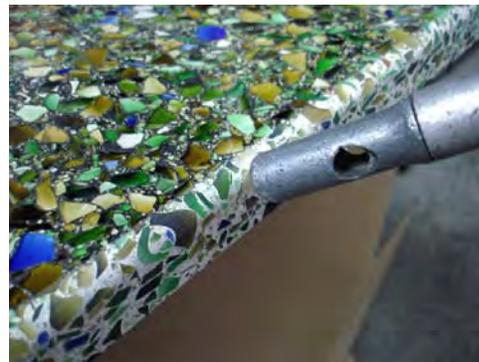


Figure 2

Patinaed panels are delivered patina treated only on the surface. Cutouts and edges will be white, as this is the integral color of the material. Cut-outs & edges should be shaped and polished to 120 grit Alpha sand paper, see **figure 1**.

Proceed to prepare for fill work by blowing any dust from the surface with compressed air, **figure 2**.

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Figure 3



Figure 4

Take care to properly mix fill to match the dominant color in the patinaed surface, **figure 3**. Pictured is Vetrazzo mix, Bistro Green, notice the dominant color is green. The polyester is mixed on a scrap of cardboard near the piece for easy color reference. Keep in mind when color mixing - the hardener is white and will influence final color. Apply the fill and remove any excess, **figure 4**.



Figure 5



Figure 6

After the fill has cured, polish to 600 grit Alpha paper, or 3,000 grit wet polish. The edge shine should match the surface, see **figure 5 and 6**.

Check that any excess polyester fill has been sanded off. We highly recommend Alpha sand paper. The surface is ready to patina.

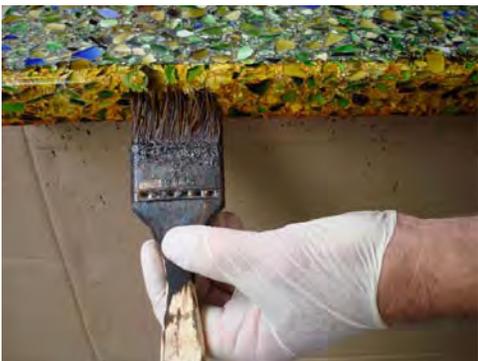


Figure 7



Figure 8

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Estimate the amount you will use and pour the patina, black Lithichrome Chemstain, into a separate container. Wear gloves and eye protection. Never pour patina directly on to a panel.

Brush on patina, stipple into the surface ensuring thorough coverage. Notice the patina is not black, this is typical, **figure 7**. Patina starts out yellow/brown and darkens as it reacts; it will not look flat black. After 30 minutes, re-apply in the opposite direction. Leave patina on edges for 4 hours. After 4 hours it may be slightly tacky.

Rinse the surface thoroughly, neutralizing the patina with water and baking soda, 1 pound of baking soda per 5 gallons of water. Rinse until clean, **figure 8**.

If patina is not dark enough to match the surface, repeat the application process. In hot, dry conditions the patina may dry on the surface before the reaction is complete. Reapply often or cover with plastic film or sheeting to delay drying.

If the edges look too dark or the glass appears cloudy, continue to wash off patina until the edge matches the top, **figure 9**.



Figure 9

Sealing

Vetrazzo **MUST** be sealed with a penetrating sealant. While panels have been factory sealed on the surface, it is necessary to seal all fabricated edges and cutouts. Application of sealant to the entire surface is recommended as a “best practice”. Resealing the entire surface is always a best practice. Apply sealant **AFTER** completion of patina work.

The sealant used should be hydro and oleo-phobic, protecting against water and oil based stain agents. Though the fabricator may use their discretion in selecting a comparable sealant, we recommend one of the following sealants:



Stone Tech Heavy Duty Impregnator Pro

<http://stonetechprofessional.com/showitem.cfm?itemnum=306&catnum=147&pcatnum=0>



CHENG Concrete Countertop Sealer

http://www.concreteexchange.com/pdfs/info/Sealer_Instructions.pdf

Stone Tech Impregnator Pro may be applied to the surfaces one hour after standing water has been removed. Apply liberally with a clean brush or roller, distributing evenly. Allow sealant to penetrate the surface. Wipe entire surface thoroughly with clean dry towel before it fully dries. Always follow manufacturer's recommendations, which can be found at the links provided above.

We suggest applying the sealant in the shop prior to installation. This will also reduce the release of fumes at the client site.

Sealant must be applied to any surface area exposed onsite during installation, including joints and any field edge cuts.

Adhesives

Use low VOC adhesive products when possible. Liquid Nails Marble & Granite Solid Surface Materials Adhesive (LN-933) is recommended when attaching Vetrazzo to cabinetry.



For a low VOC epoxy, we recommend Touchstone Edge System, two-part A&B epoxy.

Repairs

If a piece of glass chips out of the edge, re-adhere the glass with knife grade tintable polyester resin. If the glass is not recoverable, or the matrix has been damaged, tint clear polyester resin using manufacturer's recommended pigments to match the dominant glass color. Using a razor blade or putty knife, remove excess resin and let dry, using care to not scratch the area. Buff the repair to match the finish of the surrounding area.

Always test cyanoacrylate-based glues (Super Glue) on a scrap prior to using as they can vary in composition and may discolor the Vetrazzo matrix.

Care & Maintenance

Apply a protective wax product to the finished surface, after installation. Fabricators may use their discretion but we recommend Goddard's Marble and Granite Polish or a comparable product. The wax barrier provides additional reaction time for wiping up staining agents before they can do damage. Reapply as needed; this can be tested by dropping a drop of water onto the surface, if it is absorbed-reseal. Follow the product manufacturer's recommendations.

Some chemicals and solvents can damage the surface. The following is a list of potentially damaging chemicals: abrasive cleaners, lemon juice/citrus, wine, rust/paint removers, lacquer thinner, oven/metal/toilet/tile and drain cleaners and fingernail polish remover. If contact with any of these materials should occur, wipe up immediately and wash the area thoroughly with mild soap solution. Rinse with water.

If etching has occurred, polish to match the non-damaged area. Follow with a re-application of sealant and wax.

Stain Removal

Vetrazzo™ is highly resistant to common household stains but can be damaged or stained by foods with high acidic content such as lemon juice, other citrus, wine and coffee. These acids may etch the surface causing a dull appearance. This can be repaired by re-polishing the etched area to match the surface.

If stain removal is necessary, whenever possible identify the stain agent. The age of the stain, its chemical component and size may determine removal techniques. Clean the area thoroughly and apply a poultice – an absorbent material applied to a surface to draw out a stain.



Stone Specific™ offers a pre-mixed poultice stain remover; contact your local hardware store for availability.

If it is not available, the following is a common, effective poultice recipe. More than one application may be necessary.

- Talc powder, non-scented/non-oiled which can be found at places like Walgreens
- Hydrogen Peroxide-full strength

Mix together creating a thick paste, apply to stain and cover with cling film, e.g. Saran Wrap. Tape edges of film to surface; this slows the drying time allowing the poultice to draw out the staining agent. Be sure to use a low tack tape that will not leave a residue.

It may take 2-3 days to allow the poultice to dry completely. Once dry, scrape off the poultice with a razor blade; be careful not to scratch the surface, inspect the area and repeat if necessary.

Please be sure to re-apply sealant after stain removal in accordance with the process outlined in the Sealing section of this guide.

After sealant has dried, apply and buff a protective wax, we recommend *Goddard's Marble and Granite Polish*.



Warranty

Vetrazzo provides a 10-Year Limited Warranty to commercial and residential customers that register their Vetrazzo. Only installations fabricated by Certified Vetrazzo Fabricators are eligible for warranty coverage. Refer to the details of the Vetrazzo Limited Warranty provided under separate cover.

Details of the Vetrazzo Limited Warranty must be distributed to all Vetrazzo customers both residential and commercial. Vetrazzo purchases MUST BE REGISTERED in order to activate the warranty. The Certified Fabricator should register the Vetrazzo for their Customer at the time of sale. This will also ensure that the fabricator gets credit for the project, counting towards achieving Master Fabricator status. Register panels online at www.vetrazzo.com/products_warranty.asp.

LEED Point Contribution

Created by the US Green Building Council, the Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. Learn more about this increasingly adopted standard at www.usgbc.org.

Use of Vetrazzo can contribute to a variety of LEED points depending on job site particulars. Consult a LEED Accredited Professional for calculation of specific point contribution.

Customer Care and Maintenance

Customer Care & Maintenance information is available online, and in a downloadable pdf, at http://www.vetrazzo.com/products_care.html. Please provide this information to Vetrazzo customers.

Advancement to Certification Stage #2: Vetrazzo Master Fabricator & Installer

Upon completion of your 50th Vetrazzo installation, submit the list of installations, including a list of basic customer installation information to Vetrazzo at: tech@vetrazzo.com or through your Vetrazzo Representative. Upon review of the list, we will upgrade your Authorization status and notify your local Vetrazzo Dealers and Distributors so they may convey it accordingly to their customer referrals.

Master Fabricator status will elevate your positioning to the top position category on Vetrazzo's "Where to Buy" referral site, leading to more leads and competitive differentiation. Additional co-op marketing opportunities are also available for Master Fabricators. Please contact your Vetrazzo representative for more details.

Questions or Comments?

Vetrazzo is a unique material and its properties and fabrication techniques, like any other material, require practice to master. It is important to us that you feel comfortable working with Vetrazzo prior to fabricating a customer job. Should you have any questions about Vetrazzo or the fabrication process, please email us at tech@vetrazzo.com.



Vetrazzo® Technical Data

Product Description: Vetrazzo® is a recycled glass surfacing material ideal for residential and commercial applications.

Product Composition: Vetrazzo is manufactured using a patent pending composition that combines up to 85% recycled glass with Portland cement, water and proprietary inert ingredients such as minerals, pigments and other non-VOC substances. Years of research, combined with strict manufacturing tolerances and quality control, produce panels with dependable performance characteristics.

Product Slab Size: Vetrazzo slabs are 60” x 108”, 3-cm thickness. Vetrazzo weighs approximately 14.6 lbs/sq. ft.

Color and Finish: Vetrazzo is available in a wide array of colors with a high-gloss, polished finish.

Test Performed	Procedure #	Result
Food Safety	NSF / ANSI 51	NSF splash zone certified
Compressive Strength	ASTM C39	6,295 psi
Absorption	ASTM C-97-02	0.79%
Scratch Resistance	Mohs Hardness	7.5 Glass / 4.75 Matrix
Modulus of Rupture	ASTM C-99	1,004 psi

**Additional testing results will be added as completed.

MSDS: For the Material Safety Data Sheet visit: www.vetrazzo.com/msds

Nationwide Availability: Vetrazzo panels are available through a dedicated nationwide network of North American distributors and fabricators equipped with the latest tools, machinery and technology. Use of a Certified Vetrazzo Fabricator ensures a professional job performed by craftsmen who have been trained and are fully supported by Vetrazzo’s Technical Services Team. Fabrication by Certified Vetrazzo Fabricators also activates Vetrazzo’s 10-Year Limited Warranty.

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Product Recycled Content:

Vetrazzo Color	Pre-Consumer Glass	Post-Consumer Glass
Alehouse Amber	10.7%	89.3%
Bistro Green	0%	100%
Charisma Blue	5.3%	94.7%
Chivalry Blue	12.0%	88.0%
Cobalt Skyy®	76.1%	23.9%
Cool Titanium	75.8%	24.2%
Cubist Clear	75.8%	24.2%
Envy Green	75.8%	24.2%
Floating Blue	48.1%	51.9%
Glass House	0%	100%
Hollywood Sage	75.8%	24.2%
Midnight Eclipse	75.8%	24.2%
Millefiori	75.8%	24.2%
Palladian Gray	0%	100%

*** The glass content information is dependent on the information we receive from our recycled glass vendor sources. Every attempt has been made to verify this information but occasionally there will be contamination or supplementation that will shift percentages slightly.*

Product Information: Vetrazzo is 85% recycled glass by weight. Because we use only recycled glass, every panel of Vetrazzo is unique. Inherent in this process, variation in color, shape, size and distribution of glass is not unusual. Occasionally, colored glass pieces not standard in a specific Vetrazzo mix may occur. This visual effect is not uncommon, adds character to the surface, emphasizes Vetrazzo’s recycled content and is an inherent part of Vetrazzo’s beauty. Samples are cut from actual panels and therefore represent a limited appearance of the actual design and characteristics of a Vetrazzo mix.

Besides being beautiful and distinctive, Vetrazzo has many unique performance characteristics. Vetrazzo can withstand temperatures up to 600° Fahrenheit with no effect, although a trivet is recommended. Vetrazzo is very durable and resistant to everyday common surface use and wear. However, Vetrazzo is not scratchproof or completely resistant to impact. At times, chips may occur due to impact especially at high traffic areas such as sinks and dishwashers. Scratches may also occur and are most noticeable in the monotone colors.

Vetrazzo Fabrication & Installation Guide

Fabrication Information: To ensure the best installation results and to activate Vetrazzo's 10-Year Limited Warranty, a Certified Vetrazzo Fabricator should always be selected. A Certified Fabricator has been trained to the highest standards of fabrication excellence. Training includes producing strong, tight, inconspicuous seams, using proper structural support, minimizing any chipping that might occur and producing edges that are smooth to the touch. For our fabrication guide visit: http://www.vetrazzo.com/pdf/Vetrazzo_Fabrication_Installation_Guide.pdf

Warranty: Vetrazzo is backed by a 10-Year Limited Warranty for commercial and residential uses when installed by a Certified Vetrazzo Fabricator. The variation of color matching, non standard color pieces in a mix, samples not fully representative of a mix, chipping, scratching, structural support missing and seam appearance or placement are not covered by Vetrazzo's 10-Year Limited Warranty and will not result in product replacement. For complete warranty details visit: www.vetrazzo.com/warranty.

Vetrazzo is tested and certified by NSF International.
Vetrazzo is a proud member of the United States Green Building Council.



MATERIAL SAFETY DATA SHEET

MSDS Date: March 1, 2008

Product Name: Vetrazzo[®] Recycled Glass Surfacing

1. Product and Company Description

Vetrazzo, LLC

1414 Harbour Way South, #1400

Richmond, California 94804

Tel: 510.234.5550

Fax: 510.234.7890

info@vetrazzo.com

For Product Information/Emergency Contact: Vetrazzo, LLC. Tel: 510.234.5550

Product Use: Vetrazzo recycled glass surfacing panels.

2. Hazards Identification

Emergency Overview: Exposed glass edges may pose a cutting or puncture hazard. Use caution in handling exposed edges.

Appearance/Odor: Multi-colored recycled glass & cement surfacing. No odor

Potential Health Effects:

- Product in finished form does not present a health hazard through eyes, skin, inhalation, ingestion or prolonged exposure.
- Dusts and flying particles generated during cutting, grinding and forming may cause irritation and injury as specified below:
- **Acute Eye:** Dust and particles may cause irritation or injury.
- **Acute Skin:** Dusts generated from this product may cause skin irritation.
- **Acute Inhalation:** Dusts from product may cause irritation to respiratory tract, nose, throat and lungs.
- **Acute ingestion:** Not considered a potential health hazard via this route of entry. This product may cause gastrointestinal irritation if large quantities of dusts are swallowed.
- **Chronic Exposure:** The adverse health effects from silica exposure - silicosis, cancer, scleroderma, tuberculosis, and nephrotoxicity - are chronic effects.
- **Aggravation of Pre-existing Conditions:** None identified.

3. Hazardous Chemical Composition

Component: Recycled glass

As shipped, this material does not pose any health hazard because it does not contain ingredients which are known to cause immediate or serious effects.

Component: Portland Cement:

Hazardous Ingredients:

ACGIH TLV 10 mg/m³

OSHA PEL 15 mg/m³ 5 mg/m³

OSHA PEL 50 mppcf (crystalline silica < 1%)

Cal/OSHA PEL 10 mg/m³ 5 mg/m³

Gypsum (CAS# 13397-24-5) - approximately 5% to 6.5% by weight.

ACGIH TLV 10 mg/m³

OSHA PEL 15 mg/m³ 5 mg/m³

Cal/OSHA PEL 10 mg/m³ 5 mg/m³

Limestone (CAS# 1317-65-3) - approximately 0% to 15% by weight.

ACGIH TLV 10 mg/m³

OSHA PEL 15 mg/m³ 5 mg/m³

Cal/OSHA PEL 10 mg/m³ 5 mg/m³

Crystalline Silica (CAS# 14808-60-7) - approximately 0% to 0.3% by weight.

ACGIH TLV 0.1 mg/m³

OSHA PEL 13 mg/m³ (30 mg/m³ / (0.3% SiO₂ + 2))

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OSHA PEL 4.3 mg/m³ (10 mg/m³ / (0.3% SiO₂ +2))
OSHA PEL 47 mppcf (250 / (0.3% SiO₂ +5)) mppcf
Cal/OSHA PEL 0.3 mg/m³ 0.1 mg/m³

Component 1:

Appearance and Odor: Fine, off-white powder; odorless
Specific Gravity: 2.60
Bulk Density: 25 – 27 lbs/ft³
Solubility in Water: Insoluble.
% Volatile (by weight): Not applicable
PH in 5% slurry: 4.5%
Bulk Density: 25-27 lbs/ft³ (loose)
Stability: Stable
Reactivity: Inert

Component 2:

Physical Form: White acicular, free flowing non-metallic mineral powder. No characteristic odor.
Number EINECS No.: 13983-17-0 237-772-5
Melting Point: 1540° C
Density: 2.9 g/ml
Solubility in Water: 0.01 g/100 cc
pH: 9.9 Aqueous Solution

Component 3:

Physical Form: Odorless liquid
Color: Clear
Melting Point: Liquid
pH: 8.2 – 9.2
Flash point: Not flammable

4. First Aid Measures

- **Eye Exposure:** Immediately flush eyes with copious amounts of water for a minimum of 15 minutes. Seek immediate medical attention if adverse effect occurs.
- **Skin Exposure:** Wash skin with soap and water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Seek medical attention if adverse effect occurs.
- **Inhalation:** Remove person to fresh air. If necessary, use artificial respiration.
- **Ingestion:** If the material is swallowed, seek medical attention or advice.

5. Fire Fighting Measures

- **Auto-ignition:** None.
- **Flash Point:** Vetrazzo is non-combustible and non-explosive.
- **Flammability Limits:** NA
- **Extinguishing Media:** NA

6. Accidental Release Measures

Cleanup and Disposal of Spill: Solid panels or partial panels can be collected as necessary. If large amounts of dust or wastes are generated by cutting process, vacuum or sweep up material avoiding dust generation or dampen spilled material with water to avoid airborne dust. Wear sufficient respiratory protection and protective clothing where necessary and/or use engineering methods for dust control. If excessive amounts of material dust enter the waterways contact the Environmental Protection Authority, or local Waste Management Authority. Dispose of waste in accordance with local, state and federal regulations.

7. Handling and Storage

Avoid breathing dust. Wash hands before eating, drinking, smoking, or using toilet facilities. Wash thoroughly after work using soap and water. Good industrial hygiene practices should be followed when handling this material. Product is heavy and breakable; handle with care to avoid injury and prevent damage.

8. Exposure Controls/Personal Protection

- **Exposure Guidelines:** Avoid activities that cause dust to become airborne.
- **Engineering Controls:** Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the MSDS. Wet saws and cutting methods as well as wet shaping and polishing methods are recommended to reduce dust exposure during fabrication.
- **Respiratory Protection:** If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces.
- **Eye / Face Protection:** During cutting, grinding or sanding operations safety glasses with side shields or goggles should be worn.
- **Skin Protection:** During cutting, grinding or sanding operations use body protection appropriate for task including work gloves if handling sharp or rough edges and steel-toed shoes if lifting product.

9. Physical and Chemical Properties

- **Physical Appearance:** Multi-colored recycled glass and cement surfacing material
- **Odor:** None
- **pH:** NA
- **Specific Gravity/Density:** 2.37
- **Water Solubility:** Insoluble
- **Melting Point:** NA
- **Freezing Point:** NA
- **Boiling Point:** NA
- **Vapor Pressure:** NA
- **Percent Volatiles by Volume:** NA
- **Evaporation Rate:** NA
- **Viscosity:** NA
- **Flash Point:** NA
- **Explosion Limits: Lower:** ND, **Upper:** ND
- **Auto-ignition Temp:** NA

10. Stability and Reactivity

- **Chemical Stability:** Stable
- **Conditions to Avoid:** None
- **Materials / Chemicals to Be Avoided:** This product is incompatible with hydrofluoric acid. Silica will dissolve in hydrofluoric acid and produce the corrosive gas silicon tetrafluoride.
- **Hazardous Decomposition Products:** Upon decomposition, various hydrocarbons, carbon dioxide, carbon monoxide fumes, and water may be released.
- **Hazardous Polymerization:** Will not occur.

11. Toxicological Information

Acute Effects:

- No known acute toxicological effects.

Chronic Effects:

- **Silicosis:** The major concern is silicosis, caused by the inhalation and retention of respirable silica dust. Symptoms include: Silicosis develops over time when dust-containing silica is inhaled into the lungs. For some unknown reason silica in crystalline form is toxic to the lining of the lungs. When they come into contact with each other a strong inflammatory reaction occurs. Over time this inflammation causes the lung tissue to become irreversibly thickened and scarred –called fibrosis. The most common form of silicosis is called chronic silicosis, and the symptoms develop over many years of exposure. However, in the rarer form, called acute silicosis, the symptoms develop very quickly after only a short period of exposure to high levels of silica dust. Because this disease may be debilitating, it is very important to seek medical treatment as soon as possible. The American Thoracic Society position on the issue of silica carcinogenicity was published in Adverse Effects of Crystalline Silica Exposure, American Journal of Respiratory and Critical Care Medicine, Vol. 155, pp. 761-765 (1997).

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The official statement concluded that “The available data support the conclusion that silicosis produces increased risk for bronchogenic carcinoma. The cancer risk may also be increased by smoking and other carcinogens in the workplace.”

- **Scleroderma:** There is evidence that exposure to respirable crystalline silica or that the disease silicosis is associated with the increased incidence of scleroderma, an immune system disorder manifested by a fibrosis (scarring) of the lungs, skin and other internal organs.
- **Tuberculosis:** Individuals with silicosis are at increased risk to develop tuberculosis, if exposed to persons with tuberculosis.
- **Nephrotoxicity:** There are several recent studies suggesting that exposure to respirable silica or that the disease silicosis is associated with the increased incidence of kidney disorders.
- **Mutagenicity:** No Data
- **Reproductive Effects:** No Data
- **Developmental Effects:** No Data

12. Ecological Information

- **Environmental Fate:** Not Determined
- **Environmental Toxicity:** Not Determined

13. Disposal Considerations

Waste Disposal Method: Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

14. Transportation Information

- **Proper Shipping Name:** Not Regulated
- **Hazard Class:** Not Regulated
- **ID Number:** Not Regulated
- **US Department of Transportation Packing Group:** Not Regulated

15. Regulatory Information

- **Federal Regulations:** NA
- **SARA Title III Hazard Classes:** None
- **Fire Hazard:** No
- **Reactive Hazard:** No
- **Release of Pressure:** No
- **Acute Health Hazard:** No
- **Chronic Health Hazard:** Yes

U.S. State Regulations: California Prop 65 List: Crystalline silica (quartz) is classified as a substance known to the state of California to be a carcinogen.

16. Other Information

National Fire Protection Association NFPA(R) and Hazardous Materials Identification System (HMIS) Hazard Ratings:

- **Health Hazard:** 1
- **Flammability:** 0
- **Reactivity:** 0

MATERIAL SAFETY DATA SHEET

The information provided herein was believed by Vetrazzo, LLC to be accurate at the time of preparation and prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product, and to determine the suitability of the product for its intended use.

Dispose in accordance with federal, state and local requirements.