



Fabrication & Installation Guide



This guide is intended for use by Authorized Professional 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 Authorized Fabricator.

Updates to this guide will be issued periodically.

Vetrazzo® Recycled Glass Surfaces
Manufactured by Vetrazzo, LLC

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Congratulations! You have been invited to become an Authorized Vetrazzo® Fabricator & Installer.

Adoption of the Marble Institute of America Fabrication Standards

You were selected to join the growing network of Authorized Vetrazzo Fabricators because of your reputation as a stone fabrication professional. We at Vetrazzo 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 Authorization

We offer two levels of Authorization to qualified fabricators.

1. Vetrazzo Authorized 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 an Authorized Vetrazzo Fabricator your contact information will be listed on the "Where to Buy" section of Vetrazzo's website (during the next routine website update) 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.

An Introduction to Vetrazzo

Vetrazzo transforms recycled glass into exquisite, one-of-a-kind surfaces that show respect for the earth and the environment.

Vetrazzo surfaces are:

- Fabulous for countertops, vanities, tabletops, flooring, and wall cladding
- Composed of more than 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
- flooring
- wall cladding
- outdoor kitchen surfaces

Product Dimensions

Vetrazzo is manufactured in 9' X 5' X 1.25" (approx. 3 cm) slabs weighing approximately 700 pounds

Tolerances

Joint (seam) widths	Between two slabs 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.
Slab Thickness	Variance should be limited to 1/8" for slabs used in the same project.
Slab Flatness	Individual slabs should be within 1/16" flatness when measured with a 4.0' straight edge.

Handling & Storage

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

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 slabs from scratching or damage when placing slabs on A-frames. Carpet or foam works well for padding under strapping and clamps. Protect material from flexing by providing proper support.

Record serial numbers from slabs 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. 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.

Always adhere to OSHA guidelines.

Fabrication Techniques & Tools

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

Diamond cutting tools are strongly recommended as they will yield the best results.

Every shop will have different equipment; experiment with speed, square feet per minute, and 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.

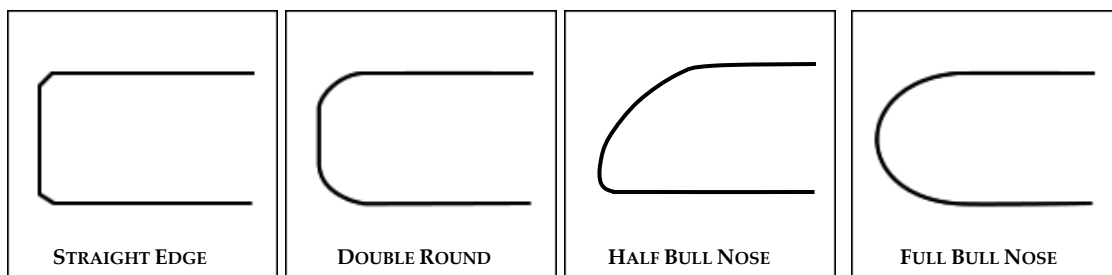
For CNC use we recommend a diamond router cylinder.

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. To create the honed finish, stop polishing at 800-grit.

Fabricators may use their own discretion in selecting polishing pad brands. However, we know Braxton-Bragg pads provide great results.

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. Straight edges with small radii or eased edges are the most popular, semi and full bull nose can also be offered. 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. Vetrazzo does not warranty glass chipping or dislodging. These edges are the responsibility of the fabricator.



If a piece of glass dislodges during edge polishing, reattach it with a knife grade tintable polyester resin. (We recommend AKEMI Marmorkitt 1000, 2 part, knife grade available in clear, white, black.) If the glass is not recoverable, tint the clear polyester resin using manufacturer's recommended pigments to re-create the missing piece. Using a razor blade, remove excess resin, let fully cure and buff to match surrounding finish.

Always follow manufacturer's directions and recommendations with polyester resins, epoxies and tints.

Sink Reinforcement

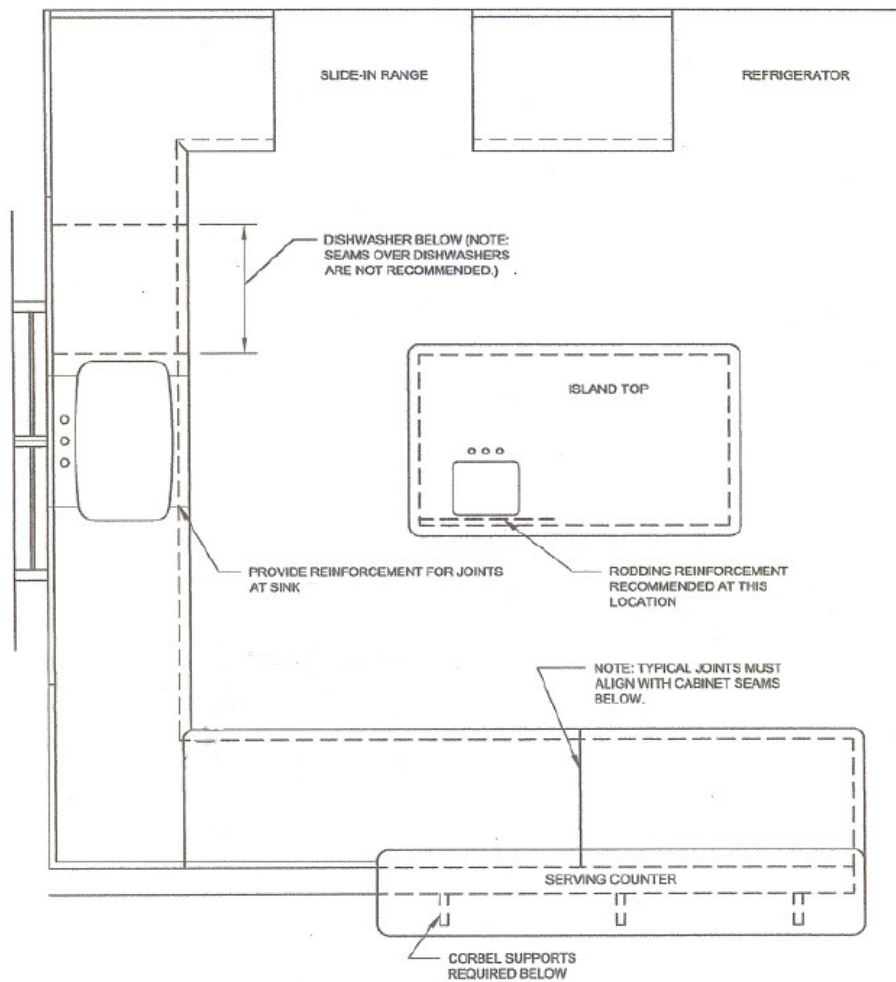
Top mount and/or undermount sinks may be used. Undermount sinks can be mounted using standard stone practices. If the material span in front of the sink is less than 4", it should be reinforced by insertion of an I-rod or other accepted strengthening practice.

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.

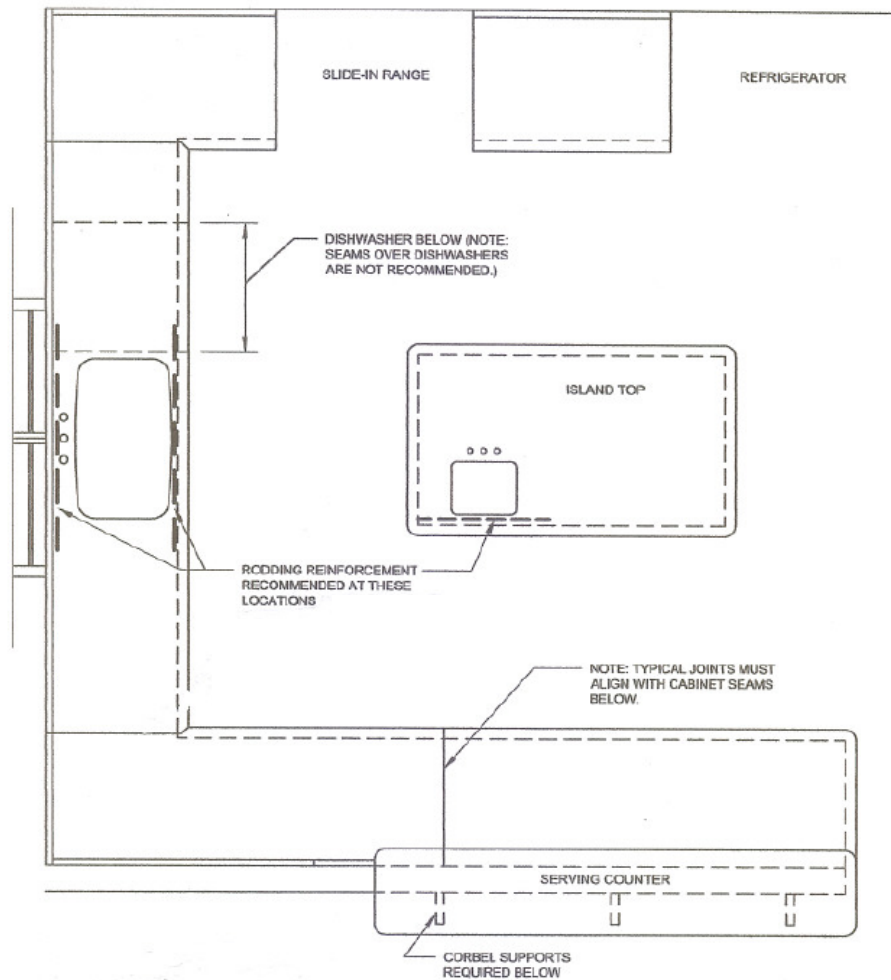
Splines. Seams, particularly between narrow sections of the panel, may be splined together with a steel or stainless key. Commonly, a large washer is used as the spline key. The metal is fully encapsulated with polyester or epoxy resin and fitted to closely cut slots in the panel, similar to the "biscuit" joint reinforcements used in woodworking.

See following drawings regarding reinforcement:



TYPICAL KITCHEN LAYOUT
(WITH JOINTS AT SINK)

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

Spans & Cantilevers

- In designs where part of the countertop is spanning between supports, the length of the span shall be limited to 2' 0".
- Cantilevers should be limited to 9".
- Cantilevers exceeding 9" should be supported by corbels at 18".

Patina (Stain)

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 an example.

The application of patina finishes must be completed prior to sealing.

Vetrazzo uses Lithochrome Chemstain “Black” brand. We strongly recommend use of the same brand in your fabrication shop to ensure color consistency. Fabricators may use their discretion in choosing brands, provided post-production staining matches the factory stain. It must be a reactive, penetrating and permanent concrete stain.

Apply to the polished surface using a brush or roller. Read manufacturer recommendations for the duration to leave stain on the material. In our experience, best results are achieved by leaving the stain on the surface for 12 hours. Remove stain with a water rinse or use a neutralizing bath. To test for adequate removal, wipe surface with a clean cloth and check for color residue. Rinse until clean.

Guard against using the incorrect color.

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 Black CS- 1. Lithochrome Chemstain guidelines can be found at: www.scofield.com/stepguide_chemstain05.html

Sealing

Vetrazzo **MUST** be sealed with a penetrating sealant. 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://www.stonetechpro.com/products/protect/hds/>
- **CHENG Concrete Countertop Sealer**
http://www.concreteexchange.com/pdfs/info/Sealer_Instructions.pdf
- **CEMENTONE Clear Sealer**
http://www.scofield.com/techdata_cementone.html

Sealant may be applied to damp 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 for 15-30 minutes. Wipe entire surface thoroughly with clean dry towel. Always follow manufacturer’s recommendations, which can be found at the links provided above.

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Honed finishes require a second coat of sealant due to the greater exposed surface area.

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

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

Installation

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. Dry fit pieces in shop to reduce work on site.

Installation Layout Considerations

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.

Remember to always write down the Panel ID!

Adhesives

When possible, use low VOC adhesives for substrate attachment as long as necessary adhesion properties are achieved.

Avoid sole use of elastomer adhesives (silicon) when adhering the slab to substrate. Their inherent flexibility can allow pieces to shift, causing cracking and chipping.

Seam Filler

Polyester resins are recommended for seam filling. Seams become inconspicuous when filled to the surface and properly buffed to match the surrounding finish. Tint polyester resins as necessary to achieve proper color matching.

Repairs

If a piece of glass chips out of the surface or edge, keep the glass and re-adhere with knife grade tint-able 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 test 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.

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 Walgreen's
- Hydrogen Peroxide-full strength

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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*.

Color Matching

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 slabs, 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.

Warranty

Vetrazzo provides a 10 year limited residential warranty to customers that register their Vetrazzo. 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. Vetrazzo purchases **MUST BE REGISTERED** in order to activate the warranty. The Authorized Fabricator should register the Vetrazzo for their Customer at the time of sale to ensure the fabricator gets credit for the project to count towards achieving Master Fabricator status (register projects online at www.vetrazzo.com).

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.



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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 www.vetrazzo.com. Fabricators should be sure to provide this information to Vetrazzo customers.

Advancement to Authorization 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.

