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GRANICRETE

INTERNATIONAL

HIGH PERFORMANCE

COATING SYSTEMS

*Epoxy/Polyurea/Polyurethane/Polyaspartic
Coatings for Residential,*

Commercial, Industrial, and Art

Tinted ... Acrylic Chip ... Quartz ... Real Metallix



FLOORING – COUNTERTOPS - ART

Real
METALLIX

What's in your portfolio?

GRANICRETE EPOXY – POLYUREA - POLYURETHANE SYSTEMS

About Granicrete	3
Training and Certification	5
Introduction and General Knowledge of Epoxies	6
Surface Preparation	13
TINTED EPOXY SYSTEMS INSTRUCTIONS	21
CHIP BROADCASTED EPOXY SYSTEM INSTRUCTIONS	24
REAL METALLIX EPOXY SYSTEM	29
QUARTZ EPOXY SYSTEM	37

About Granicrete International:

Formed in 2006, Granicrete International has become a premier leader in the decorative concrete industry thanks to the fine installations done by our customers. Because of exceptional finishes, Granicrete has been sought out and shown on numerous home improvement television shows over several broadcasting networks.

The basis of success has been our focus for developing user friendly systems and products that require little to no learning curve in order to achieve stunning and successful installations. We enjoy serving both novices and seasoned professionals to successfully bring the “Wow Factor” to their clients.

What Will Be Your Portfolio of Wow Factor Projects?

Granicrete has remained steadfast to provide the best training in the industry. We have been told many times over by recognized industry leaders that our system of training is the best they have ever experienced.

With such success from our Original Countertop Surfacing System, our installation systems have expanded over the years to include the following:

- **RESIDENTIAL INTERIOR AND EXTERIOR FLOOR OVERLAYS**
- **COMMERCIAL INTERIOR AND EXTERIOR FLOOR OVERLAYS**
- **REAL METALLIX EPOXY FLOORS AND TOPS**
- **COMMERCIAL EPOXY FLOORS**
- **RESIDENTIAL EPOXY FLOORS**
- **ORIGINAL COUNTERTOPS**
- **DESIGNER COUNTERTOPS**
- **SHOWERS AND WALLS**



Equally important to our user-friendly products and excellent training is your need to be financially rewarded for your fine work. We developed our systems to be both cost effective for both you and for your clients while providing you with excellent profit opportunities.

Today's story is about you...

Congratulations for taking this step forward in training! Today you get to start your journey in learning how to successfully use Granicrete products.

It is our hope that you will broaden your abilities for using of our installation systems to serve a wide variety of clients in diverse markets.

THE MARKETS FOR OUR SURFACING SYSTEMS

RESIDENTIAL:

Homes / Apartments / Condominiums / Townhouses

HOSPITALITY:

Hotels / Resorts

COMMERCIAL:

Offices / Retail / Malls / Plazas / Restaurants / Amusement Parks / Parking Garages / Hospitals

GOVERNMENT:

Buildings / Parks / Schools / Universities / Stadiums / Arenas



The “U” has been designed to support your success and is your place to go for ongoing support. It is a great resource to learn more about the products and systems of Granicrete.

You are encouraged to take time reading our Product Specification and Use Sheets and reviewing installation guides as you will find answers to questions you may have before you start using those products. We also have short concise videos for many of our systems and application techniques in the U as well.

Here is the list of the U’s offerings:

1. Product Specification Sheets & Safety Data Sheets (viewable and downloadable)
2. Agreement Templates (downloadable and customized)
3. Color Charts for Glass, Micas, Stains, Epoxies, Colors (downloadable)
4. Training Videos
5. Pictures as provided from our installers for download
6. Coloring recipes
7. Marketing aids and online store for custom made brochures, job site signs, door hangers
8. Installer tips and Help Desk to forward questions

Commendations and Concerns:

The U provides you the opportunity to express commendations and concerns. We like to hear good things about distributors and our corporate team. Likewise, should you have a concern let us know for that gives us the opportunity to become better.

Your contributions to the “U”:

We value your contributions of pictures, coloring formulas, and installation tips. Your contributions can become a part of your on-line gallery for your marketing efforts and may end up on the public side of the web where you can tell the world about your works. With any pictures you upload, we recommend staging your shots with lighting and using a high-quality digital camera with interchangeable lenses.

The “U” is a Privilege:

This is a rarity but suspension or removal may occur due to improper use of products or systems, consumer complaint related to inability or unwillingness to resolve a confirmed problem, or a determined inactivity for purchasing of Granicrete’s products for our system(s) or providing unauthorized access to the U for individuals not under your direct employment.

Training

Training is vitally important that you obtain a very good understanding of any system prior to installation. Successful installation is vital to the Granicrete name and image as well as yours. It is your lifeline to gaining clients and their referrals for the long term.

A note about “Training”:

You are encouraged to put to further practice the knowledge and skills you learn in training before you begin installing for your clients. Look at practice as your opportunity to “play” with our products and create unique finishes that will amaze your prospects. A professional in their field always puts time into developing and honing skills. Such practice will set you above and apart in your market. Training is not a warranty by Granicrete of your independent work in the field. All warranty and guaranty you make in your installs are strictly between you and your clients.

How to Get Training for our Systems:

Original Countertop Surfacing

For those needing more hands-on instruction, such may be offered through small classroom instruction or comprehensive online video practice system. Both include materials to practice with and samples you make are yours to keep and show to your prospects.

Interior & Exterior Floor Overlays

For those needing more hands-on instruction, such may be offered through small classroom instruction or comprehensive online video practice system. Both training programs include materials to practice with and samples you make are yours to keep and show to your prospects.

Real MetalliX Floors and Tops

Training manual and how-to videos are on Granicrete University.

Designer Tops

Training guide is offered on demand by request having already completed Original Tops Training.

Shower & Wall Finishes

Training manual is in Granicrete U. Training in Floor Overlays is much helpful prior to doing this system.

Commercial-Industrial Epoxy Coatings

Training guide and how-to video are in Granicrete University.

Sales & Marketing Training

This online presentation, manual, and sales brochures are available for purchase from Granicrete International. We want you to not only have successful project outcome but highly profitable projects.

The Epoxy Flooring Market

Epoxy floor systems have been around for decades. What consumers believe to be a professionally installed system has made its way into the hands of individuals who are not well trained and directly to consumer to install by buying DIY kits off the shelves at home improvement stores and online. This evolution has damaged the credibility of epoxy flooring market as consumers have lost confidence in the products.

Yet, epoxy floor systems are still under high demand because of their clean looks and price affordability. In order to separate yourself from the competition you need to speak to your prospects about the uniqueness of Granicrete's products you are using. In doing so you will create consumer doubt about your competitors and have greater success in closing sales.

Many of your competitors know little about the product they install. They lack the understanding of nor attention to detail for floor preparation for proper long-term adhesion of coating.

- The pores of concrete need to be cleaned and then opened. Proper degreasing followed by profiling the concrete using chemical etching, grinding, or shot blasting will prepare the floor for receiving epoxy. Chemical etching without neutralizing will leave your floor without being in the pH neutral range.
- Residue removal is not achieved with shop-vacs. The profiling will leave a concrete dust in the pores (if shot blasted or grinding was done) and chemical etching can leave a "caking" of the pores (concrete dust plus wet neutralizer). Without this being vacuumed using a concrete vacuum or where permissible power-washed, the coating will not fully bind to the concrete and will be compromised by binding to the dust.
- Delamination from improper floor prep and also having moisture vapor being trapped under its non-breathable surface. Emitting less than 2psi of moisture vapor is ideal for epoxy adhesion as 4psi is often the upper tolerance for coating lifting-delamination. **Granicrete's MVEP (Moisture Vapor Epoxy Primer)** is proven to reduce moisture vapor from 15psi down to 1-2psi.
- Checking the floor for moisture and alkalinity is equally important. pH neutral floors are ideal for epoxy adhesion. High alkalinity can produce a whitening of the concrete, often evidence as so, and this must be resolved. **Granicrete's EFF-Blocker** is excellent to seal efflorescence and prevent from continued leaching into coatings above.

The added cost of these prevention steps in both time and materials is one you wish to advise your clients. Both you and your client will enjoy the peace of mind that comes from proper floor preparation. Ultimately it is your responsibility to diagnose and resolve moisture issues in concrete before you apply any coating.

Worse yet, manufacturers promote speed of completing the install instead of doing the install right for the successful project outcome. Installers have been misled into thinking about fast work and fast money and as their installs start delaminating and failing, they can't get out of town fast enough.

The long-held belief is that a longer initial tack and cure time enhances coating bonding. This is true – if proper floor preparation has occurred. Such preparation involves cleaning, degreasing, profiling the concrete so its pores will receive the epoxy AND checking the concrete surface for moisture vapor.

Far too many installers cut corners and then avoid dealing with moisture issues because it causes additional time and expense. They fear losing profit and to cover costs they fear their quote will be beaten by the competition (who are cutting the same corners.)

THIS IS WHY YOU NEED TO KNOW YOUR GRANICRETE PRODUCTS AND SPEAK WITH PROFESSIONAL AUTHORITY TO YOUR PROSPECTS. You might not be the lowest price, but you will have provided peace of mind to the consumer for doing the job right and the investment made by the consumer being the right choice.

The Evolution of Fast Setting Coatings:

Recent market changes driving dry times and costs have promoted Polyaspartic sealers as a single go-to product and bypassing the use of epoxies. At first this chemistry was unproven and through installers use in the field, Polyaspartic coatings by manufacturers who have improved formulations is working well. What is a Polyaspartic coating? It is an "aliphatic polyurea." What is an aliphatic polyurea? The aliphatic side cures to a very tough durable finish with high UV protection and exceptional adhesion to epoxies and properly profiled concrete surfaces. The polyurea side yields a higher build (coating thickness) combined with faster curing coupled with great UV protection and long-term durability.

The compromise of the Polyaspartic is its reduced working time. A good rule of thumb is to cut the specs of a Polyaspartic's "pot-life" in half. That is the time when the product will set up in bucket. More important is the working time for rolling out the coating before it become too tacky and no longer workable for a proper roll-out.

So a 20-minute pot life is more reflective of a 10-minute working time. And if you are in a humid or hot ambient environment, that working time becomes less. This is why the combination of spreading the product while also cutting in edges, risers, and control joints is a challenge unless you are more experienced and can work at a high pace solo or you have a helper or crew for such projects. ***Granicrete's POLYUREA 80C provides you with up to 40 minutes pot life (20 minutes working time). Therefore, working solo is made possible!***

The big benefit for the Polyaspartic is that in as fast as it cures, it permits the project to go back into service faster. Some projects will mandate the need of this product because of the narrow time window you have from start to finish plus adequate cure time before your commercial customer can be back in business with heavy foot traffic

and vehicles on the surface.

GRANICRETE'S POLYUREA 80C GLOSS: THE OPTIMUM POLYASPARTIC HYBRID

- 1-gallon kit
- Coverage of 200-300sf per gallon kit
- Very good color hold for Granicrete Mica Essence for broad projects and with Granicrete's Dispersions and Acryli-Shades for FLOORS, COUNTERTOPS, AND ART projects.
- Pours fluidly, then notched squeegee, follow with an easy backroll.
- Good 30-40 minutes of true working time
- 4 hours for cure time
- Foot traffic within 24 hours
- Vehicle traffic within 72 hours

Polyaspartics are exceptional coatings over epoxy and quality manufacturers have improved the chemistry to provide great bonding directly to profiled concrete with performance features similar to epoxies that bond directly to concrete.

The Evolution of Epoxy Coatings:

With the development of fast setting polyaspartics, some manufacturers were determined to develop faster setting epoxies. The goal: Provide excellent faster setting epoxy to go under the excellent fast setting Polyaspartic.

But why not just do polyaspartics only? Now you get the rest of the story. Epoxies have positive inherent chemistries for being tinted with liquid colorants and infused with colorant powders. They also are exceptional chip broadcasting and quartz broadcasting. With fumed silica they are able to accept the last two on vertical basis for floor-to-wall coving. Polyaspartics however have a lower concrete moisture sensitivity threshold and pretty much all concrete holds moisture. Moisture testing is encouraged.

Granicrete's Polyurea 80C Gloss holds its colors. Granicrete's CA-FD Epoxy (Cycloaliphatic fast drying) provides the broad use of both color infusion and broadcasting. Granicrete's Metallix Epoxy yields even greater working times for your artistic endeavors..

Advantages for the Consumer of the Epoxy Flooring System:

Consumers are looking for the following:

1. Competitively priced
2. Yields great looks
3. Long-term performance
4. Quickly be able to use their garage or space.
5. A sense that you know what you are doing

Granicrete's Epoxy Floor Systems achieve all of these.

1. **Competitively Priced:** Full chip broadcast systems can run installers as much as \$2.00 per square foot. You are priced well under that even when considering the extra performance associated with the MVEP.
2. **Yields great looks:** In reality, all epoxy floor systems when installed correctly begin looking the same from the onset. The real issue, what do they look like in 6 months, a year, or years later. By selling the performance features of our products (which are listed herein, you are helping your consumer understand the value of long-term performance that comes with you).
3. **Long-term performance:** You want customers for life. If your prospect is only looking for price, that person may be better off going to a competitor who is not looking to be in business for the long term. Essentially, lower price always leads to those who cut corners or install inferior products.
4. **Quickly be able to use their garage or space:** Granicrete offers many different coatings to meet any customer's needs and wants.
5. **A sense that you know what you are doing:** We hope this sales aid and others we have designed instills the confidence that is evident when you talk with prospects.

Choosing the Right System

Granicrete offers a precise selection of epoxy's, polyureas, and polyurethanes. You get to offer different systems for different performance requirements while staying competitive on price. Later in this manual we will explain how to choose the right products for the right application. If all else fails call your Granicrete Distributor or Granicrete Headquarters. Reference the index section of this manual for all the product information sheets relating to this manual.

What are the installation cost and pricing considerations?

- ✚ **Square footage total:** larger square footage projects will require a lower square footage price to be competitive.
- ✚ **Additional prep:** Added prep would include crack repair, removal of existing coating or floor material, slab repour.
- ✚ **Time on the jobsite:** In this manual we cover multiple coating options. Some are designed for quick turnaround (1 day install). Others will require 2-3 days. More visits to the job-site results in high square footage price.
- ✚ **Manpower needed:** Products with more working time may be done solo or with an assistant. Faster drying products with short working time may likely require more than yourself and depending on the size of the project, more than just one assistant. You must recognize your abilities and that of your team for successful project outcomes.

Income Opportunities

The market segment for epoxy floors may be highly competitive resulting in lower margins per square foot than enjoyed with Granicrete's other systems. Be prepared for such.

There is still great money to be made in coatings. Begin with residential work and progress into commercial. Learn your local market pricing and what is offered.

NOTE: You have a major advantage over competitors who only do garage floor coatings. You can offer dual projects being done at the same time. By alternating dry times of dual projects, you can achieve both while making the best use of your time and adding to your profitability. In this benefit to you, you offer a value savings to your prospects that can be highly competitive and create the desire for prospects to dismiss your competitors.

DON'T be limited to residential garages. Homeowners are starting to use coatings for interior rooms (Kids Bedrooms, Craft Room, Family/Game rooms...). The Commercial and Industrial applications are endless. There are millions of square footage out there waiting to be protected.



Project Considerations

1. What is expected of me and what will the customer do?

Draw your lines as to what work you will do. Most garages will need a fair amount of clearing out and storage in the backyard, neighbor's garage, or off site. Be clear as to what is expected of the customer before you arrive to begin your installation. Waiting for things to be move (or becoming the mover yourself) costs you time and money.

Be clear to the customer, explain how long they must wait before walking, moving furniture, or driving on the coatings.

2. What is the condition of the existing substrate?

Crack bridging is very important as cracks will show immediately in the epoxy. The customer needs to choose what amount of cosmetic work needs to be done and you need to make sure your agreement is clear about cracks appearing. Granicrete's Epoxy Crack Patch Gel can be used to repair cracks, but you can never guarantee that they won't come back.

3. Are you doing other rooms or projects?

If you can work your dry times between concurrent on-site projects, you are able to maximize your production and deliver more for the customer than if you were waiting between steps. Keep this in mind and by doing so selling multiple projects per site works extremely well in your favor to more money in your pocket and will close the door on your competition!

4. Measuring

Be precise in your measurements. A scam done by competitors is to charge a lower square foot price but charge for more than the actual square feet. By being straight forward with your measurements and pricing, you build credibility and trust with your prospect.

5. Working within the framework of proven success

Avoid taking on more challenging installs until you are confident in doing so. Taping patterns is more time consuming and any bleed through of one color into the other will cause you hours of time with a detail brush to resolve.

Use the colors from the color chart and the chip blends as well. Sell your customer into what you have to offer (which is very broad).

Site Preparation

A clean and efficient work area is important to your installation as it signifies a professional approach to your work. Use a tarp or heavy drop cloth to protect floors or landscaping. Have many clean mixing pails, cleaning solvent, mixing solvent (acetone), squeegees, sealer rollers, etc. on hand. Keep contractor trash bags and can on site for empty containers and other trash.

Insist that during the time of the project that kids and pets are kept off your working surfaces. Caution tape may need to be stretched across sidewalks and doorways to remind people from walking or driving over your floor. If a customer parks in the garage daily and they are on their cell phone coming home it is very likely they will forget that you just finished rolling out new epoxy. Caution tape is a **MUST** to help prevent them from driving onto wet epoxy.

Be cautious about chemicals flowing into flowerbeds, gutters, drains, pools, and landscape. Consider covering and protecting plants while doing prep work. Rinsing acid wash solution into the surrounding landscape is not recommended. Vacuum up all liquid and dispose of it properly per local code. **You may avoid chemicals altogether by using a quality concrete grinder and high-performance concrete vacuum (not a shop vacuum). Moisture is the enemy of coatings. It is best to avoid introducing chemicals and water when doing such coatings.**

Always put everything away to keep a clean jobsite. A messy work area is most often going to cause the customer to find something wrong with your work. Be sure tools are not left out for the safety of others. Do tape off the area that is not to be walked on.

Temperature Considerations

Read your product data sheets and have with you Safety Data Sheets. You may need to avoid applying coatings at ambient temperatures below 50°F or above 95°F. Substrate temperature should be at least 5°F above the dew point. Applications on concrete substrates should occur during the cooler season to decrease the chances of out gassing. The material should not be applied in direct sunlight, if possible.

KEY POINTS FOR WORK-SITE PREP

Setup an organized mixing area

Protect plant life and surrounding buildings

Mask off cabinets or walls butting directly to the floor

Clean jobsite at the end of every day

Surface Preparation

Granicrete's many coatings systems are designed to adhere to concrete substrates. Degrease the surface first then etch (grind, pressure wash, acid etch, bead blast). It is important to create the strongest bond possible between the concrete and your coating. After prep work is complete your concrete should feel like 30-80 grit sandpaper and when misted with water the water should quickly absorb into the concrete. It is very important that in your profiling, no matter what method you use, the dust and sediment are fully removed. The epoxy should be binding to the concrete and not to any of the concrete residue from profiling. Pressure washing and concrete vacuums are excellent to remove debris. Shop vacs are not adequate.

Rule #1: Clean and Sound!

Concrete Floor Prep

As with any coating system, the adhesion of Granicrete is only as good as the substrate preparation. It is *imperative* that the substrate be clean and sound. This is the #1 rule and the determining factor when considering whether to resurface something. If the floor you are working on has loose tiles, flaking paint, salt damage, or anything else that will compromise the surface it is necessary to get below it and into uncompromised concrete. Many items such as grinders, chip guns, scarifiers or shot blasters come in handy for topical removal. If you have a crack that will be repaired, clean these out.

Once you have done this and have determined the substrate is sound, it is necessary to clean the surface thoroughly.

Before starting flooring work, test existing concrete slab to make sure there is no efflorescence or high levels of alkalinity. Alkalinity refers to a high pH reading which means the floor is not neutral. A high alkaline environment can cause salts to creep up through the cement called efflorescence. These salts tend to prevent or destroy the bonding of coatings to the concrete. The most common form of testing is the use of a wide-range pH paper or tape. Make sure the floors pH reading ranges between 5-9 to ensure adhesion. The testing of concrete for alkalinity can show the amount of alkalinity only at the time the test is ran and cannot be used to predict long-term conditions.

Calcium chloride tests should be conducted to determine if the concrete is sufficiently dry for an epoxy flooring installation. The calcium chloride tests should be conducted in accordance with the latest edition of ASTM F 1869, *Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride*. When running a calcium chloride test, it is important to remove any grease,

oil, curing agents, etc. so accurate readings can be obtained.

Failing to adhere to these strict guidelines can result in product delamination, discoloration, blistering, or all together failure of the coating system. Testing is the responsibility of the applicator. Granicrete International has no responsibility for failures due to any of the above conditions.

Step 1: Degrease and Clean

Concrete must be clean, dry, and free of grease, paint, oil, dust, curing agents, or any foreign material that will prevent proper adhesion. The concrete should be porous and be able to absorb water. A minimum of 14 days cured is required on all concrete. Relative humidity in the concrete floor slab should be below 80% (per ASTM F-2170).

Glue, grease, and other substances must first be removed from the surface. Oil and grease can be removed by cleaning the surface with a good degreaser that contains an etching solution to open the pores as well as a detergent to hold the grease at the surface so it can be washed away. Garages will almost always have oil or grease spots that need to be treated. For bad oil spots and grease use TSP to treat the area, make sure to rinse multiple times after using TSP.

Carpet glues and tile mastics also must be removed prior to resurfacing. Yellow tile and carpet glues can be removed with a wall scraper with an 8" razor blade or a floor grinder equipped with a cup wheel designed for removing coatings and glue. Remove all glue down to raw concrete. Very thick glue applications can be softened with a remover or ground off with a Carbide Tipped Cup Wheel or floor scraper. Black mastic can also be ground off. *(A test to see if oils and mastics have been removed is to mist water over the area in question. If the water beads up, the surface needs more degreasing. If the water absorbs into the concrete, you have successfully removed the contaminant.)*

Step 2: Etch Concrete

1. The best option for etching concrete is using dry-prep (Grinder, Shot blaster or Scarifier). Grinders are the most widely used tool to prep concrete for coatings. Shot Blasters and Scarifiers are typically only used for larger commercial projects. Not only does Grinding roughen up the concrete to create a strong mechanical bond between the concrete and coating, but it also levels out the concrete. Dry-Prep is the best option because you can prep and coat in the same day. Acid Washing will create a strong bond, but you must wait until the next day for the moisture to escape from the concrete. Grinders can be rented from your local tool rental shop. The concrete should be at least 2500 psi and have an ICRI concrete surface profile within 3-5. After initial preparation has occurred, inspect the concrete for imperfections and treat as necessary
2. If your concrete surface is slick or tightly troweled, then you will want to do an acid wash. With the advancement in "Green" etching solutions muriatic acid is rarely used. Granicrete recommends Surface Gel Tek's HD24 Pre-Grind. Read the directions for HD24 before

using. The old school technique of acid washing can be used as well but is not the best option - 10 parts water to 3 parts muriatic acid solution. Do not use this solution to remove glues, mastics, and grease. The purpose of the acid wash is to profile the slick concrete to enhance the adhesion of the textures. Always put the water in your bucket and slowly pour in the acid solution. A cap of floor cleaner such as Simple Green will help reduce the fumes from the acid solution.

After completing this stage, we want to neutralize the acid that has opened the pores of the concrete by doing an ammonia rinse. Ammonia rinse can be done by adding one part ammonia to 10 parts water and spread the solution over the surface area. If using a "Green" etching solution make sure you follow the manufacturer's instructions.

***Note:** When using HD24 Pre-Grind you need to use a quality acid resistant bristle brush to work the product into the concrete and loosen grease, oil, and other debris.*

Be aware of local water run-off codes related to water run-off into drains and sewers so as not to contaminate

Note:

As your installation business grows into large residential or commercial work it is best to purchase a floor grinding machine to increase the ease of prep work. The internet has many manufacturers to select from. Considerations including price are:

- 1. Weight: What will you need to load and offload the unit? Can the unit easily come apart in sections to make for lifting. This may determine if it can go in your pickup truck or need to have a trailer, or greater need for a hydraulic lift gate.*
- 2. Power: Will you need 110 or 220 power and what amps does it pull. Knowing such will determine the need for connection devices and requirement for a generator.*
- 3. Replacement parts and convenience for repairing yourself or needing for another to do so (locally or at a specialized facility).*
- 4. Payment plans, financing, and consumer reviews.*

Step 3: Crack Repair “Bridging” and Spalling

If there are cracks or spalling to address, now is the time to do so. If not, you are ready to skip to the coating and installation process.

Cracks are inevitable and there are no 100% guarantees that they won't come back.

Cracks and spalling repairs are for cosmetic enhancements. Such efforts should never be guaranteed to never return. Your efforts buy time before the crack or spalling problem may return. That time frame is not fully in your control and may be as short as a few months or as long as several years. Some coatings will flex slightly with the crack to help prevent it from coming back. Granicrete's Crack Repair system has repair thousands of linear feet of cracks with great success.

You can note that we crossed out the word “repair” and replaced it with the word “bridging”. When working on a crack you are literally building a bridge from one side of the crack to the other.

First, identify the type of crack:

- Look at the width...is the crack consistent in width and depth?
- Look at the location... is it by a joint or on its own?
- Look at the height difference... is there heaving or sinking of the earth underneath?
- Look at the placement of construction and control joints...are there joints? If there are no joints, you may wish to call a concrete contractor to determine if joints need to be cut in to prevent further cracks.
- Ask the homeowner if it moves or has remained the same? Moving cracks might only be bridged for the short term.

What causes a crack?

- Wrong placement of control joints
- Earth movement
- Clay
- Settling
- Water and frost
- Uneven sub grade.

Older interior foundations have typically finished settling which will make crack repair much more effective.

When you choose to fix concrete cracks for a coating system it is recommended that you use Granicrete's Epoxy Crack Patch Gel 4H. Ten Minute Treatment can also be used, but it works more effectively under Granicrete's Overlay System.

- Cut out the crack about ½” deep with a diamond blade or crack chasing blade if 1/8 inch wide or larger.

- If cracks are wider than ½” you will want to mix 30 grit sand into your epoxy crack patch gel before applying into the crack.
- Be sure to blow, sweep, vacuum, the area clean prior to taking the next step.
- Mix Epoxy Crack Patch Gel per instruction on the containers
- Tool the product into the crack using a steel putty knife. Make sure you are pushing the material deep into the crack to create the strongest crack bridge.
- Do not scrape the crack perfectly flat. Allow it to dry slightly higher than the surrounding area.
- Grind the Dry Epoxy Crack Patch Gel perfectly flat so the crack does not shadow through.



If you choose to repair the spalling do the following:

- Clean out spalled area with a 4” grind and cup wheel, Vacuum clean
- Mix Epoxy Crack Patch Gel with 30 grit sand to create an epoxy mortar
- Fill spalled area.
- Smooth off with concrete cup wheel and 7-inch grinder

KEY POINTS FOR CONCRETE FLOOR PREP

Rule #1 – CLEAN & SOUND SUBSTRATE

Degrease the concrete using a good quality degreaser

Etch concrete using Grinder or HD24 Pre-Grind

Bridge Cracks & Spalled Areas

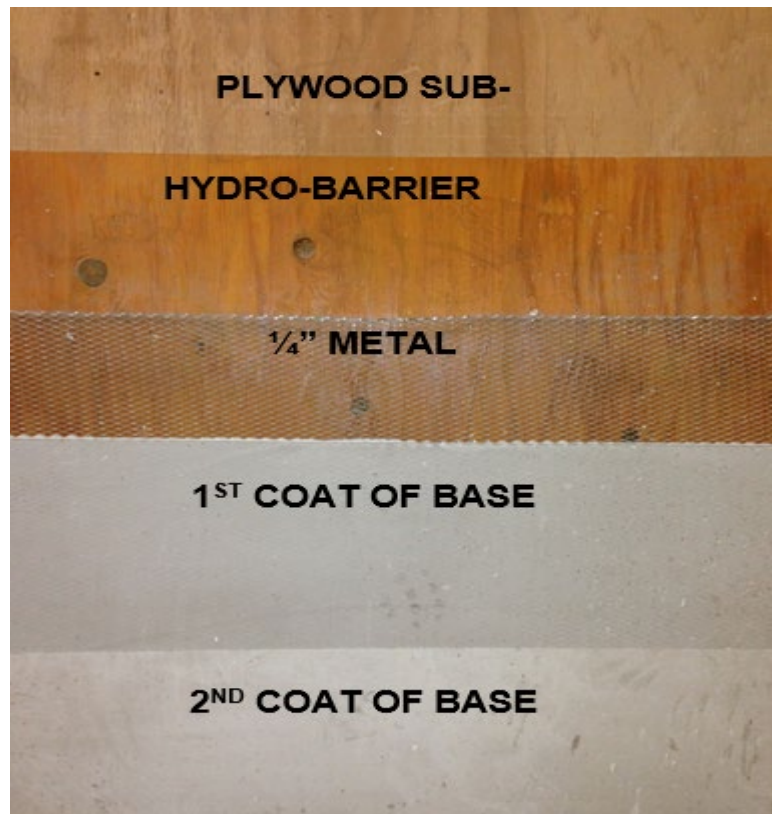
Wood Sub-Floor Prep

When coatings a second story or elevated deck that has a wood sub-floor, other steps are necessary before beginning the coating process. First, if the installation is outdoor, never use OSB as a substrate. $\frac{3}{4}$ " plywood would need to be used to replace it. It is not advisable to use a cement board without added reinforcement as cracks will likely occur at the joints. The goal is to create a monolithic, reinforced, concrete substrate using Granicrete products. Decks that are poorly constructed and have lots of flex need to be re-built or reinforced before entering into these steps.

Using Plywood and Metal Lath:

1. First sweep and vacuum the area to be resurfaced. Caulk perimeter joints with 1/8" latex caulking. Roll a layer of Granicrete Hydro Barrier Membrane onto the entire wood surface. This will create a barrier for water and moisture.
2. Lay Diamond Mesh Metal lath or Mapei plastic lath flat over dried membrane. Use a minimum 5/8" staple and begin to staple thoroughly every few inches. You should overlap the lath material a few inches to provide a seamless floor.
3. Once the lath is installed, **two** layers of Base Blend ("Base") are floated into the lath to create a flat and stable surface. Small hairline cracking may occur in the product but does not compromise the integrity or aesthetic value of the Granicrete flooring product. **MUST:** Do not allow the floated overlay to come in direct contact with vertical walls and baseboards. You must use Groutline Tough Tape at the base of the walls to prevent the monolithic floor from adhering to the vertical wall or cracking will eventually occur.
4. Allow for extra time for Base to dry before applying any coatings. You **DO NOT** want to trap moisture in the base coat.

Note: Your first coat of base blend over $\frac{1}{4}$ " lath will cover about 40-50 square feet per bag. The second coat will cover about 100-120 sq. ft. per bag.



Using Hardiebacker over Plywood

1. First sweep and vacuum the area to be resurfaced. Caulk perimeter joints with 1/8" latex caulking.
2. Install 1/2" Hardiebacker securing with screws. Make sure to countersink the screws.
3. Use fiber-mesh tape and Granicrete Texture blend to tape and mud over all the seams. Do not allow the material to build a mound over the seams, keep the seams flat.
4. Embed 2' wide rolls of fiberglass mesh in your first coat of base blend to create a monolithic floor that will resist cracking. Make sure you overlap your seams 2-3" when laying the mesh into the wet base blend and do not allow the mesh to bubble or ripple. This will cause multiple pours of base blend.
5. Apply a second coat of base blend over the entire floor to cover any fiberglass mesh that is showing through the first coat. Once this coat dries you are ready to coat the floor.

KEY POINTS FOR WOOD-SUB FLOOR PREP

Rule #1 – CLEAN & SOUND SUBSTRATE

Seal the plywood using Granicrete's Hydro-Barrier Membrane

Reinforce the floor using Metal or Plastic lath stapled directly into the plywood.

OR

Use Hardiebacker over the entire floor and embed fiberglass mesh into the 1st coat of base blend to create the seams floor.

Gypsum Floor Prep:

Gypsum flooring is a porous and soft underlayment that is perfect to install Granicrete flooring products over. Prepare the surface like concrete. As rule #1 is in force.

Gypsum is a very porous product and may require an additional primer coat to ensure a uniform look.

RULE #2 – ALWAYS HONOR CONTROL JOINTS

Control joints are “designed breaks” in concrete slabs to allow for vertical and horizontal movement of each individual slab. Concrete contractors are trained to know where and how often the breaks should be based upon the soil, concrete thickness, and structural weight the concrete is supporting.

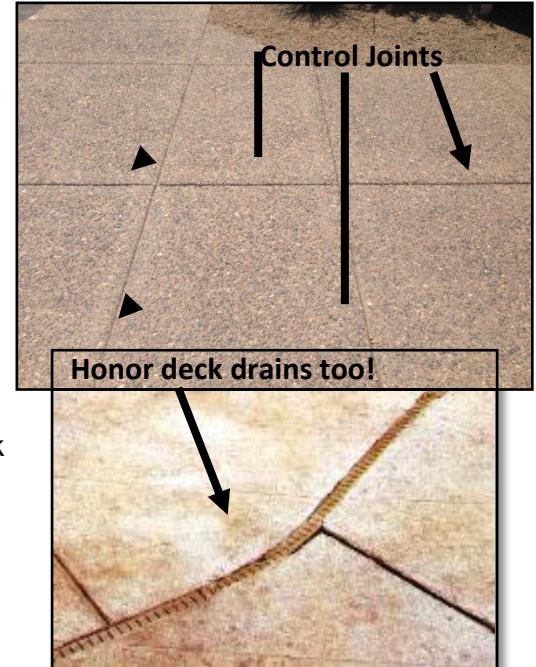
Without these control joints, the above stress factors will result in moving cracks that are unlikely to be “controlled”. Hence it is important to know the age of the foundation and the cracks. An old concrete surface is less likely to still be moving.

Control joints can be created by saw cutting the slab or by separating the slabs and beveling the joining edges. Tension rods may also be put in the slab to cause the concrete to crack intentionally. These “controlled crack” tend to be more straight line linear for length and with minimal width for the crack.

You must honor these joints by not bridging them.

If you fill in your control joints, it is guaranteed that they will crack and the material in the joint will most likely pop out over time.

Some industrial and commercial projects required that these joints be filled in for cleaning and safety reasons. Please contact Granicrete Tech for proper procedures.



TINTED EPOXY: Solid Color – Zero Chip Broadcast

SYSTEM INSTRUCTIONS

Description:

Granicrete's Zero Broadcast Solid Color Coating System can be achieved with many different products. It is important to choose the right products for your installation. Solid color floors create a seamless glass like finish that is easy to clean, easy to install and easy to maintain. This is the quickest, easiest and cheapest option for long-lasting protection.

Advantages

- Chemical Resistant Floor
- Easy to Clean
- Easy to Maintain
- Multiple Color Options
- Glass Like Finish

Disadvantage: Color may amber over time. Imperfections in concrete may be more visible with solid color. Full-chip broadcast systems will cover all the epoxy, conceal all floor prep and mending, and offer more slip resistance.

Slip Resistant Additive can be broadcast over a wet coating for a slip resistant surface

Uses

- Heavy duty commercial environments
- Commercial kitchens, locker rooms
- Residential garage
- Chemical storage, packaging and production facilities
- Health and animal care facilities
- Warehouses and automotive repair shops



Installation Process for TINTED EPOXY NO CHIP BROADCAST

When installing a solid color system the key is good prep as with any of the coating systems in this manual. The slight imperfections in the concrete will shadow through. Grinding crack repair to match the surface is so important.

Granicrete recommends a minimum of two coats on the concrete to create a solid color system. Light colors on a rough concrete slab may require more than two coats. Solid White typically takes 3 coats for good hide of floor imperfections.

If the solid color finish will receive lots of UV then a pigmented Polyurethane or Polyurea must be applied as the final coat (WB-P53, SL-P60, Polyurea-80C)

There are many different options to create a solid color floor. In this section of the manual we will give you many different options to create the same look. The tan box that follows every option detailed gives general information about that system. Use the information in the tan boxes to determine what system will work best for your application. Once you have selected the appropriate system your next step is to read the product information sheets for each product within the system. The product information sheets are in the index of this manual as well as the Granicrete University.

Tinted Coating Option 1: 1-DAY (Depends on Prep time required)

Epoxy: CA-FD (Pigmented)

Sealer: Polyurea 80C Gloss

CA-FD is a low odor cycloaliphatic epoxy with fast drying 6-8 hours. Working time is about 40 minutes. Tint is available in several colors. See Granicrete's color chart for epoxies.

Polyurea 80C Gloss also dries in 2-4 hours and with a 40-minute working time. Having more than one person is helpful on this step.

If there are moisture issues found prior to prep or during prep, MVEP would be applied and that wraps up your first day. Then these two products are applied as your 2nd day.

KEY POINTS FOR OPTION 1 – SOLID COLOR

- Residential – commercial interior, warehouse, shop floors
- Low, moderate, or high traffic
- Good chemical resistance
- Moderate to heavier build
- Moderate odor which diminishes during fast dry of 80C
- Installation time after prep – 1 day
- Foot traffic 24 hours and drive time 3 days
- Excellent material coverage keeps system cost effective.

Tinted Coating Option 2: 1-2 days pending amount of time for prep.

Epoxy: CA-FD (Pigmented)

Sealer: WB-P53 Gloss or Satin OR SL-P60 Gloss or Satin

Using the same CA-FD (Pigmented).

Applying WB-P53 in gloss or satin with exceptional coverage and very little odor. About one hour working time and 7 hour set time. WB-P53 may cost more per 1.5 gallon-kit but its coverage far exceeds solvent sealers and has a very low odor.

SL-P60 in gloss or satin has a moderate odor that diminishes as the sealer dries and has the same working time and set time as WB-P53.

KEY POINTS FOR OPTION 2 – SOLID COLOR

- Residential – commercial interior, warehouse, shop floors
- Low, moderate, or high traffic
- Good chemical resistance
- Low build
- Low odor with P53. Moderate odor diminishes with P60
- Installation time after prep – 1 day
- Foot traffic 24 hours and drive time 7 days
- Excellent material coverage keeps system cost effective.

PARTIAL CHIP BROADCAST

SYSTEM INSTRUCTIONS

Description:

Granicrete's Partial Broadcast Coating System can be achieved with many different products. It is important to choose the right products for your installation. Partial Broadcast Floors create a granite-like appearance with a slight texture to the floor. They are easy to install and easy to maintain.

Partial broadcast is commonly done at a rate of 1 lb. of chips to 100sf of floor.

Advantages

- Better slip resistant than no chip floors
- Easy to Clean
- Easy to Maintain
- Chemical Resistant
- Multiple Base & Chip Colors Available

Disadvantage: Color may amber over time. Imperfections in concrete may be more visible with solid color. Full-chip broadcast systems will cover all the epoxy, conceal all floor prep and mending, and offer more slip resistance.

Uses

- Heavy duty commercial environments
- Commercial kitchens, locker rooms, Kids Bedrooms
- Garage floor system
- Chemical storage, packaging and production facilities
- Health and animal care facilities
- Warehouses and automotive repair shops



Partial Broadcast systems are commonly used in residential applications when the customer is looking for an inexpensive floor with mild texture yet still maintaining that epoxy finish that is easy to clean. The key is good prep as with any of the coating systems in this manual. The slight imperfections in the concrete will shadow through although chips will help disguise imperfections. Grinding crack repair flat is important as it will help eliminate flaws in the concrete from shadowing through.

Granicrete recommends a minimum of two coats on the concrete to create a solid color system. All partial broadcast systems will have a minimum of two coats. One coat to broadcast your chips into and one coat to seal the chips into the surface.

If this system is going to be used in an area that will receive direct UV then both coats need to be Polyurethane or Polyurea (WB-P53, SL-P60, Polyurea-80C).

There are many different options to create a Partial Broadcast. In this section of the manual we will give you many different options to create the same look. The tan box that follows every option detailed gives general information about that system. Use the information in the tan boxes to determine what system will work best for your application. Once you have selected the appropriate system your next step is to read the product information sheets for each product within the system. The product information sheets are in the index of this manual as well as on the Granicrete University.

Same performance elements as the Option 1 for no chip broadcast. This required that the tinted epoxy be cut in and rolled out and chips be partially broadcasted before it sets. With all three elements in place, this is not something one should do solo.

The Polyurea has a higher build and the chips may be more submerged under it. The yield will be more of a glass-like finish but can also be of slip resistance concern to your client.

But if back to service time for vehicle traffic is a short period, the Polyurea 80C will be your best product.

KEY POINTS FOR PARTIAL CHIP FAST SET

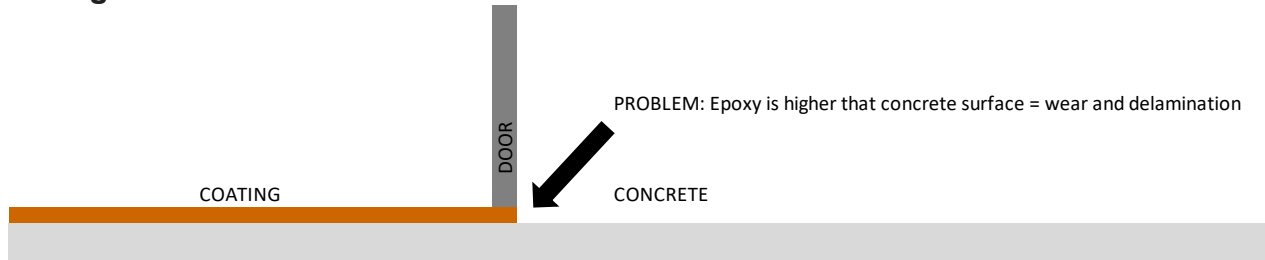
- Residential – commercial interior, warehouse, shop floors
- Low, moderate, or high traffic
- Good chemical resistance
- Moderate to heavier build
- Moderate odor which diminishes during fast dry of 80C
- Installation time after prep – 1 day
- Foot traffic 24 hours and drive time 3 days
- Excellent material coverage keeps system cost effective.

Note: If moisture issues exist from any floor to be coated, the application of MVEP will add one day for installation.

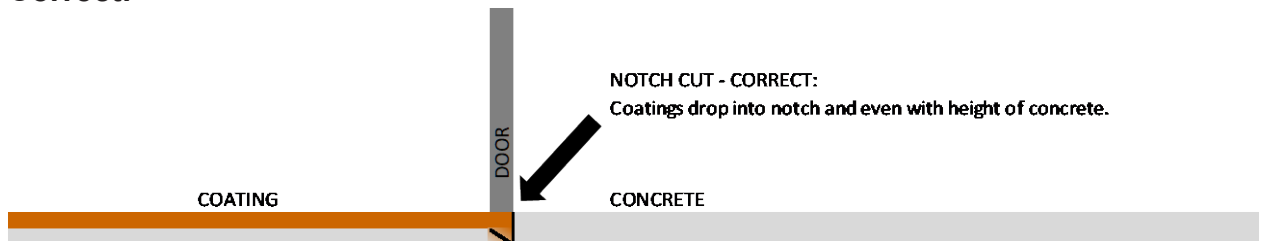
Note: When installing tinted or partial broadcast, consideration as to where the epoxy will stop is important. Epoxies are subject to ambering (yellowing) and fading. This can happen even when a good UV sealer is applied over the epoxy. Knowing this you need to determine with your customer whether to stop the coating at the dropping point of the garage door or extend outside the garage to the apron as it joins the driveway. It is the area between the door and the apron that can fade.

Stopping at the garage door's drop down is properly achieved with an angled saw-cut per the following:

Wrong:



Correct:



Cut straight down using a guide to keep cut straight. Then cut at 45° angle down into your straight cut.

FULL CHIP BROADCAST

SYSTEM INSTRUCTIONS

Description:

Granicrete's Full Broadcast Coating System can be achieved with many different products. It is important to choose the right products for your installation. Full Broadcast Floors create a solid granite-like appearance with a mild to heavy texture. They are easy to install and easy to maintain.

Advantages

- Slip Resistant Texture
- Easy to Clean
- Easy to Maintain
- Chemical Resistant
- Multiple Base & Chip Color Available

Uses

- Heavy duty commercial environments
- Commercial kitchens, locker rooms, Kids Bedrooms
- Garage floor system
- Chemical storage, packaging and production facilities
- Health and animal care facilities
- Warehouses and automotive repair shops



Full Broadcast systems are commonly used in residential applications when the customer is looking for an inexpensive floor with mild to heavy texture yet still maintaining that epoxy finish that is easy to clean. The key is good prep as with any of the coating systems in this manual. Full Broadcast systems are very user friendly. The build that is created from the chips will help hide imperfections in the concrete. It is still essential to grind crack repair flat as well as any other imperfections in the concrete that may shadow through.

The installation process for a full broadcast is simple. Roll out an epoxy as your primer or chip coat and while walking on the floor with spike shoes cover the floor with your chip color of choice. Once the floor has dried you will broom up the remaining chips that do not stick. Using a wide metal floor scrape lightly scrape the floor to remove any excess chips. Using a floor machine equipped with 120 grit sanding screens can be used to flatten the chips creating a finished floor that is almost glass like. Sanding the floor is NOT required. A quick scrape of the floor will yield a slightly more textured finished floor.

There are many different options to create a Full Broadcast. In this section of the manual we will give you many different options to create the same look. The tan box that follows every option gives general information about that system. Use the information in the tan boxes to determine what system will work best for your application. Once you have selected the appropriate system your next step is to read the product information sheets for each product within the system. The product information sheets are in the index of this manual as well as on the Granicrete University.

FULL BROADCAST Options:1 Day Including Moisture Vapor

Epoxy: MVEP Clear

Immediate broadcast of chips: 1lb. chips/10sf

Sealer: Polyurea 80C Gloss or Satin

WB-P53 Gloss or Satin

SL-P60 Gloss or Satin

MVEP can serve a dual purpose but only with a full broadcast. Tinted MVEP will reduce moisture vapor in concrete and can also be fully covered with a chip broadcast. MVEP should always be fully covered by a tinted coatings or full broadcast. Tinted MVEP does not have its full vapor moisture reduction, but where moisture vapor is under 8psi to begin with, MVEP can be effective. MVEP also yields the tackiness needed for the acrylic chips to bind to. Although dry time is 6-8 hours after application, MVEP can be ready for sealer late in day 1 pending total amount of floor prep needed and completed.

Polyurea 80C yields a higher build over the acrylic chips for a very good seal.

KEY POINTS FOR OPTION 1: 1-DAY FULL CHIP BROADCAST w/ MVEP

- Residential – commercial interior, warehouse, shop floors
- Low, moderate, or high traffic
- Good chemical resistance
- Moderate to heavier build
- Moderate odor which diminishes during fast dry of 80C
- Installation time after prep – 1 day
- Foot traffic 24 hours and drive time 3 days
- Excellent material coverage keeps system cost effective.

Real METALLIX

ADVANCED FLOORING SYSTEM



Granicrete's Real Metallix floor system is a designer level coating system used to create high end finishes. It is also available in a 100% solids epoxy or a fast curing Polyurea system. Also available for interior and exterior finishes. The Real Metallix system is a highly versatile system being used for residential (garages, kitchens, dining rooms, bedrooms, whole house) as well as commercial (restaurants, lobbies, automotive shops, showrooms, salons, hangars). As the installer you create numerous finishes that resemble natural stone, marbles, hammered copper and more.

Description:

Granicrete's Real Metallix Advanced Flooring System offers a wide range of colors, coloring techniques and installation possibilities. These instructions will help guide you through a basic installation as well as some artistic possibilities. Don't be limited to the coloring techniques provided. As a concrete artisan you should develop your own coloring looks and techniques while staying within the product guidelines.

The techniques for Real Metallix flooring carry into countertops, bar tops, tabletops, vanities, art, and more. Those are referenced in Granicrete's Original Countertop Surfacing manual.

Advantages

- Available in Epoxy and Polyurea
- Highly artistic finish – 1 of a kind
- Strong floor designed for industrial protection
- High Chemical Resistance
- High Wear Resistance

Uses

- Restaurants, shops, commercial lobbies and more
- Heavy duty commercial environments
- Locker rooms
- Garage floors
- Warehouse and Automotive shops
- Residential Homes
- Airplane Hangers

REAL METALLIX Installation Process

When installing a Real Metallix system the key is good prep as with any of the coating systems in this manual. The slight imperfections in the concrete will shadow through. Therefore, grinding crack repair flat is so important. When the Metallic Powders are mixed into your epoxy or Polyurea they will flow and move with the coating. If you have low areas in the concrete or cracks that were not properly treated the metallic's will settle in those areas and highlight the imperfections of the concrete.

Granicrete recommends a primer coat before applying your Metallix coat. The primer will keep your Metallix coat on the surface allowing for better movement and control of the finish. If the concrete is not primed your Metallix coat will absorb into the concrete and you will not get the heavy movement that Metallix are known for.

The primer can be a clear or pigmented MVEP, CA-FD, or Metallix Epoxy. The clear versions of these can be mixed with Mica Essence Powder either a ½ or full 226-gram jar. Use colors that will be in your show coat or use contrasting colors to the show coat. Either can create more depth in your Metallix.

If your project will be exterior, then you will need to use Polyurea 80C system to prevent ambering. The Polyurea 80C requires well-profiled concrete. Read the spec data sheet for this product.

There are many different options to create a Real Metallix Floor. In this section of the manual we will give you many different options to create the same look. Once you have selected the appropriate system your next step is to read the product information sheets for each product within the system. The product information sheets are in the index of this manual as well as the Granicrete University.

Temperature Considerations

Avoid applying at ambient temperatures below 50°F or above 95°F. Substrate temperature must be at least 5°F above the dew point. Applications on concrete substrates should occur during the cooler season to decrease the chances of outgassing. The material should not be applied in direct sunlight, if possible.

Creating Movement and Artistic Elements

Apply different colors of Mica Essence infused epoxy in irregular patterns and allow to start curing. This will provide you with the least movement because as the epoxy settles and cures your movement will flow out. *Note: Real Metallix should never be used when a solid color is desired. Real Metallix will always have some movement with shading and light and dark areas.*

1. **Move by tools:** This can be Magic Trowel, Finishing Trowel, Brush, comb, sponge, or about anything.
2. **Move by air:** Using a battery powered leaf blower to blow the curing colored epoxy into specific directions and into itself. Such permits creation of veins or softening like cloud or soft marble. You will also see variations of colors applied to take place as the Mica

Essence blends together. This can be repeated until the epoxy begins to set. A misting of alcohol or solvent can extend the period of repetition. Using an air compressor and air hobby pistol can control finer and more precise movement.

3. **Move by solvent or alcohol:** Mist or dribble solvent onto epoxy.

- CA-FD: May wish to wait 10-15 minutes before misting of such.
- MetalliX Epoxy: The artistic working time is nearly 40 minutes for this product.

The different solvent and alcohol effects:

- Isopropyl will soften lines and yield minimal elements of pearlescent looks.
- Denatured alcohol will yield more line softening and more pearlescent finishes.
- Acetone will have significant line softening and deeper 3D-like pearlescent bubbles or hammered finish.
- Other solvents like **MINERAL SPIRITS SHOULD NOT BE USED** as they may carry oils that weaken the epoxy. Such may be more appropriate for “art pieces” hung on walls and yield a strong hammered finish.
- Caution: Do not over saturate the surface as this can cause solvent entrapment or delamination.
- Mica Essence mixed in the solvents: Adding Mica Essence with solvent and spraying from a spray bottle will penetrate the epoxy and create additional marvel looks and stunning finishes.

4. **Move by flame (plumber’s torch):** Extreme caution must be used if you have infused solvent and alcohol. If such has oversaturated the epoxy, the torch can set the epoxy on fire. Using the torch can move the epoxy and create varying and finer pearlescent looks.

Note: Too much torching infuses carbon dioxide from the end of the flame into the epoxy which can cause premature yellowing of epoxy especially for lighter colors like Charred Pearl.

SECRET: Keep it simple. Do not overpromise and underdeliver. Consider doing finishes that have have little to moderate attention to creating movement. These easier finishing are just as stunning, but they are quicker to do and much easier to control.

Don’t get pulled into the idea that more is greater. Some of the finishes you may see on the internet that inspire you are the ones you do not want to do. Installers will show their works of art but they will never tell you of the epoxy failure due to too much solvent infusion. Nor will they tell you of the repeat visits, lost time, additional product to replace or repair, nor of their losing referrals from the client.

Installation Breakdown of Real Metallix System

Step 1: PREP

Test your concrete for pH and moisture. Proper pH should be on the alkaline side. Moisture content should be below 4-5%. Moisture vapor pressure can be validated by plastic tarp tape down and by calcium chloride moisture vapor kits.

Follow the instructions in the manual as well as the information listed on the individual product information sheets. You will want to repair all cracks and imperfections in the concrete before applying any coating. The concrete slab should be completely degreased and etched before proceeding. Best to use dry method of floor preparation by concrete grinding with exceptional concrete vacuum removal of dust.

Step 2: PRIMER COAT

A primer coat is recommended as the open pores if the profiled concrete may outgas and create unsightly bubbles and craters through the “Show Coat.”

Apply the primer of your choice. Suitable primers for the Real Metallix system are MVEP, CA-FD, Metallix Epoxy. Polyurea over well profiled concrete may be used. Your primer can be pigmented (Black, Gray, White...) or you can mix half or a full jar of the recommended dosage of Mica Essence.

The benefit of adding Mica Essence to your primer is simple. If you do not want a solid color to shadow through your Metallix, you can use Mica Essence in your CA-FD, Metallix Epoxy, and MVEP. When Denatured Alcohol is sprayed on the REAL METALLIX SHOW COAT surface, it can cause a separation where the Metallix will push away and reveal the primer.

If your primer is a solid color (grey, black, white...) then you will see that color under your metallic finish. When you use a metallic primer you always see metallics and not solid colors.

Step 3: REAL METALLIX COAT (SHOW COAT)

This is the fun step!! There are three products that can be used for your Metallix Coat.

CA-FD (Clear) - 100% solids floor epoxy designed for interior applications. CA-FD gives you more time to move the Mica Essence metallix powders and create the desired finish. The additional time can also have some of your artistic design “soften” and not hold its artistic look.

Metallix Epoxy (Clear) - 100% solids floor epoxy designed for interior applications. It gives you about 40 minutes of artistic endeavors to move the Mica Essence but holds the artistic elements better.

Polyurea-80C – With 80% solids, this Polyurea is designed for fast paced installs, suitable for interior and exterior applications. This fast setting product does not allow for

much time to create movement. Movement should be created within 10-15 minutes after application. Using Polyurea-80 allows for a quick turnaround on any project. Be sure to follow the coverage rates on the product information sheet.

NOTE: THE SHOW COAT WILL COVER LESS SQUARE FOOTAGE PER KIT THAN IT WOULD AS PRIMER.

*CA-FD "Show Coat" will yield about 120-175 sf per 1.5-gallon kit.
MetalliX Epoxy "Show Coat" will yield about 170-220 sf per 3-gallon kit.*

Timing: When should I start spraying solvent or creating movement.

1. Apply coating with an irregular pattern and allow to begin to cure. Using a notched squeegee, Magic Trowel, or notching your Magic Trowel will help get the epoxy spread out. Get it down and laid out before you begin manipulation.
2. Spray solvent and blow either CA-FD or Metallix Epoxy after 10-15 minutes of application. Spraying can be done by using a Granicrete Professional spray bottle.
3. Spray solvent and blow Polyurea 80C within 10-15 minutes as well. Polyurea 80C can act differently than epoxies will because it is a higher build sealer. Become familiar with this product before playing with it. In fact, become familiar and play with these epoxies as well.

NOTE: Too much alcohol/solvent can become entrapped and impede proper curing due to ongoing outgassing. This can lead to bubbles, white spots, blemishes, and ongoing softness to the epoxy. Mist as needed to move but do not oversaturate. Early solvent will soften. Later solvent has more distinction.

Step 4: CLEAR COAT

Apply the Clear Coat of your choice (WB-P53, SL-P60, Polyurea-80C) once the epoxy is tack free.

Before applying your clear coat it is recommended that you take an 80 - 120 grit sanding screen and lightly knock down any debris in your Real Metallix Coat. Then do an acetone wipe to clean the debris before your clear coat.

If you have missed a 24-hour period from show coat to clear coat, you will need to degloss the surface by using a black soft janitorial buffing pad or screen.

Become familiar with your coverage rates using the data spec sheets and Granicrete Sealer Chart.

REAL METALLIX Option 1: 1-Day

Primer Coat: No primer coat done with risk of outgassing.

MetalliX Show Coat: CA-FD or Metallix epoxy. Metallix Epoxy with its higher build may both inhibit outgassing and minimize solvent or alcohol misting from revealing the concrete.

Sealer Coat: Polyurea 80C, WB-P53, SL-P60

This approach is not for someone working alone. The time for mixing, cutting in edges, squeegee and roll out, and then manipulation and movement challenged with 15 to 20-minute working time.

KEY POINTS FOR OPTION 1: REAL METALLIX 1-DAY

- Residential – Commercial indoor
- Medium Traffic, Good chemical resistance
- Medium-High Build
- Low odor for epoxy, mild odor for sealer
- Installation time - 1 day
- Foot traffic 24 hours and drive time 3 days
- Inexpensive Metallix System

REAL METALLIX Option 2: 1-Day

Primer Coat (Pigment tinted or Mica Essence): MVEP, CA-FD, or Metallix Epoxy

Primer Coat infused with Mica Essence can do so with 113 grams (1/2 of jar)

MetalliX Show Coat: CA-FD or Metallix Epoxy Mica Essence can do so at 226 grams (1jar) per 1.5 gallons mixed epoxy.

Sealer Coat: SL-P60 Gloss or Satin, WB-P53 Gloss or Satin

KEY POINTS FOR OPTION 2: REAL METALLIX 1-Day

- Residential – Commercial indoor
- Medium traffic, good chemical resistance
- Medium-High Build
- Low odor for epoxy and P53, mild odor for P60 that dissipates shortly
- Installation time - 1 day
- Foot traffic 24 hours and drive time 7 days
- Inexpensive Metallix System

REAL METALLIX Option 3: 1-Day Exterior or Interior

Primer Coat (Mica Essence): Polyurea 80C

*Primer Coat infused with Mica Essence can do so with 113 grams (1/2 of jar)
Concrete must be well profiled.*

MetalliX Show Coat: Polyurea 80C *Mica Essence can do so at 226 grams (1jar) per 1.5 gallons mixed epoxy.*

Sealer Coat: Polyurea 80C

This approach is not for someone working alone. The time for mixing, cutting in edges, squeegee and roll out, and then manipulation and movement challenged with 15 to 20-minute working time.

KEY POINTS FOR OPTION 3: REAL METALLIX 1-Day

- Residential – Commercial indoor
- Medium traffic, good chemical resistance
- Medium-High Build
- Low odor for epoxy and P53, mild odor for P60 that dissipates shortly
- Installation time - 1 day
- Foot traffic 24 hours and drive time 3-5 days
- Moderate cost Metallix System

GRANICRETE QUARTZ FLOORING



Aggregate-filled epoxy flooring (Quartz) is a combination of low viscosity, 100% solids epoxy resin and different types of aggregate filler. These materials form a seamless, monolithic flooring system suitable for many heavy use areas. Broadcast aggregate is usually 20 - 30 mesh silica, Monterey type sand or decorative color quartz. If unusually high levels of abrasion are anticipated, aluminum oxide may be substituted for a portion of the broadcast sand. If using a slurry base, the slurry filler is finely graded silicas.

Installed flooring thicknesses will vary from 60 mils to 1/4 inch depending upon service requirements. Thinner floors are suitable for foot traffic and light vehicle traffic. Thicker applications are required for heavy mechanical abuse, impact or abrasion. Because of the gradation of fine fillers, floors done with the slurry-broadcast method are denser and more resistant to impact and chemical attack than broadcast floors done with a single size aggregate. Double broadcast floors usually achieve a somewhat more uniform appearance and are the floors of choice for commercial applications where aesthetics is an important consideration.

Surface texture can be varied from aggressively slip-resistant for wet areas such as showers and food preparation areas to an "orange peel" texture suitable for offices, hallways or laboratories. It is very important to achieve the proper texture for a

given area. A floor with too much texture in a laboratory will be difficult to clean, and a floor with an “orange peel” texture in a commercial kitchen will be too slippery. These application instructions will present met

SURFACE PREPARATION

Surface preparation is vital to the long-term success of the installation. All sealers and coatings other than well adhered epoxy materials must be removed. Moisture vapor emission testing should be done using the calcium chloride test method according to ASTM 1869-04.

The surface must be smooth and free of ridges and imperfections that may transfer to the finished surface. Projecting roughness should be ground smooth with a floor machine or angle grinder. Wherever the flooring system does not abut to a vertical surface and around floor drains, a “keyway” must be cut into the floor. Do not feather edge the materials. In making the keyway, use a grinder or small concrete saw to make a cut approximately 1/4” into the floor. Chisel away the inner shoulder of the concrete at least 1/2 inch. The resin system will flow into this recessed area and be protected from edge damage.

Next, surface preparation on the main field of the floor is accomplished. All surfaces to be coated must be clean, sound and free of mastics or other contaminants which may interfere with bonding. Concrete must be acid etched, shotblasted or diamond-ground to achieve a 5-10 mil profile. If acid etching is used, it must be done using a floor machine with a “nylogrit” brush or HD-24 Pre-grind can be used.

Etching must be done in strict accordance with the guidelines detailed on specific product information sheets. Properly prepared concrete must have a texture like 120 grit sandpaper. Wood surfaces must be exterior grade plywood, securely fastened to the subfloor or joists. Wood must be sanded before application and the joints filled with 3” fiber mesh tape and Granicrete Epoxy Crack Patch Gel 4H. Smooth the tape and resin by pulling a squeegee or flat trowel over the area.

Small depressions, cracks, holes and control joints should be filled with Epoxy Crack Patch Gel 4H or Epoxy Crack Patch Gel 4H thickened with fumed silica. Large holes should be filled with an epoxy mortar consisting of 4-5 parts aggregate (30 mesh silica or graded trowel sand) to 1-part resin. These areas must be primed with liquid resin before filling.

True expansion joints should be pre-marked, filled with Epoxy Crack Patch Gel 4H and the flooring system applied. After a 24-hour cure, sawcut through the floor and fill the sawcut with a flexible urethane caulk.

COVE BASE APPLICATION – IF VERTICAL APPLICATION DONE

For seamless flooring applications where maximum sanitation is required or where floors will be cleaned with large amounts of water, installation of integral cove base is essential. The cove base ties the floor to the wall without a seam and facilitates cleaning. The base can be installed to any height. In areas where the walls receive abuse such as lavatories or elevator cabs, the cove base is carried to wainscot height. The most common height of the cove is 4-6 inches. The cove is the most visible part of the installation and the ability to install a “clean” base with attention to detail often separates one application company from another.

Note: When preparing your costs for a coved project, you have the faster floor application and the more time consuming vertical and cove application. You should consider preparing two costs using the “or” close to your prospect. ***“The investment you would be making for the floor only is \$xyz or to have us do both the floor and the vertical coving your investment would be \$XYZ. Which do you prefer?”***

SURFACE PREPARATION AND INSTALLATION OF THE TERMINATING STRIP:

The cove base is always installed after surface preparation of the horizontal floor area and prior to installation of the horizontal flooring system. The vertical surface must be clean. If installing cove over FRP panel, stainless steel or a previously coated surface, it is very important to abrade the surface well prior to installation. Use sandpaper or a grinding wheel to accomplish this.

In some renovation installations, particularly in commercial kitchens, portions of the wall will have deteriorated and become unsound. If these areas are minor, they should be repaired using fiberglass tape and Granicrete Epoxy Crack Patch Gel 4H. In some cases, portions of the wall will need to be replaced to assure a sound substrate for the cove base.

All cove base installation should be done using a terminating cap strip at the top of the base. This material should have an “L” configuration, be plastic or metal and generally leave a cove 1/8- 3/16 inch in thickness. A chalk line should be snapped at the predetermined height of the base and the cap strip attached either with construction adhesive or sheet metal screws. If using screws, be sure to use flat screws that do not protrude beyond the thickness of the cap strip. **Granicrete carries zinc terminating strips for your convenience.**

MIXING AND APPLICATION OF THE BASE MATERIAL:

Granicrete CA-FD Epoxy should be used as the resin binder for the cove base system. A good formula for the cove mixture is 3-4 parts aggregate to 1-part mixed epoxy to 1-part Fumed Silica. The powder aids greatly in helping the mixture “hang” on the vertical surface. It also fills void in the aggregate creating a stronger and easier to seal surface.

Convenient mixing can be done in a 5-gallon pail using a ½” electric drill with a Jiffy type mixing attachment. Mix kit of CA-FD EPOXY and add 3 quarts of Granicrete Fume Silica

and 9 quarts of aggregate. Blend thoroughly to completely homogenize the mixture. If you have difficulty getting this mixture to hang on the wall without sagging, additional aggregate can be added to obtain a “drier” mixture.

Just prior to application of the cove blend, prime the surface with unfilled CA-FD EPOXY. Bring the primer down to coat at least 1½ inches on the horizontal floor. Priming ensures a better bond and helps the resin/aggregate material hang better. If the primer should advance past the tacky stage, re-prime the area.

The resin/aggregate blend should be applied to the vertical surface using a narrow flat trowel or broad knife. Leave enough material at the juncture of the floor and wall to form the radius and pull the remaining material up to the metal cap strip. This initial placement of the material is very important. If too much material is left, the excess must be pushed away during finishing. If too little is initially deposited, hollows or cavities will be left that will require the application of more material during finishing.

After the material has been placed, it should be finished with a 6 inch inside step cement tool. Radius on the trowel should be ¾ or 1 inch. Smooth the material by angling the trowel slightly and using pressure when pulling the trowel. Use the lip of the cap strip as a thickness guide. The right-handed mechanic should move from right to left as he is facing the wall. Trowel lubrication is important in attaining a smooth, “closed” surface. Isopropyl alcohol makes a good low toxicity lubricant. The trowel may either be sprayed or dipped into the lubricant. A paint tray with a saturated piece of carpet works well. It is important to feather the cove material into the horizontal floor substrate. This avoids a ridge that would need to be sanded before tying the floor into the cove.

Finishing the cove is a skill learned by close attention to cause and effect. The objective is a smooth, uniform surface free from unsightly, soil collecting irregularities. This is accomplished by understanding what type of finishing technique produces the desired result and looking back over your work to evaluate the result. Material that accumulates on the top of the cap strip should be scraped away as you proceed.

Special attention must be paid to the inside and outside corners. A smaller radius tool or spoon is helpful on the inside corners. Outside corners must be individually formed and carefully shaped.

After the cove has cured and before application of the horizontal floor, scrape or sand any rough areas that may have been left. Avoid grinding when doing a color quartz cove as grinding marks may show through the clear sealer.

After the placement of the flooring system and before the final grout coat is applied to the floor, the cove must be sealed. If working with pigmented materials, add Granicrete Fume Silica 7200-si18 (*“7200 sq. inches @ 1/8” depth*) as a thickening agent to the sealing resin. This will allow the application of a thicker coat without sagging.

Do not use fumed silica if working with clear resin as this may cause cloudiness in the material. Since the purpose of the cove is to ensure sanitation and cleaning, it is important to leave a smooth surface, free from dirt-collecting texture.

Two seal coats are recommended. Allow the first coat to tack up slightly before applying the second coat. Applying thin, even coats avoids puddling of the material at the bottom of the base.

The crevice between the cap strip and wall must be sealed with a urethane caulking material after completion of the cove.

Pre-practice by the applicator of this Cove Base process is recommended before field installation is done

FLOOR PRIMING

Prime by applying 1 coat of MVEP if you have a moisture concern. This coat must be tack-free before proceeding with the application.

APPLICATION OF THE SLURRY BASE OR FIRST RESIN COAT

All drains, grease traps, etc., must be completely taped prior to resin application. Tape must be pulled as the application proceeds. If the system being applied is a slurry-broadcast system, the self-leveling slurry base must be applied with a notched trowel or squeegee to achieve a 50-60 mil base. A 1/4 x 3/16 notched trowel held as close as possible to a 90° angle (straight up and down) leaves 50 mils. A 1/4 x 1/4 notched trowel leaves 60 mils. Thirty mesh aggregate broadcast to refusal into a 50-mil slurry base will produce a floor with a finished thickness between 110-125 mils. Broadcasting to refusal into a 60-mil slurry base will produce a floor with a finished thickness between 125-140 mils.

If the system being applied is a double broadcast system, apply unfilled base resin (CA- FD Epoxy - Clear) **at the rate of 100 square feet per gallon** (16 wet mils) as the first base coat. If the concrete has not thoroughly dried, moisture tolerant MVEP must be used on this broadcast. Use a 1/8-inch notched trowel held at 30°-45° angle to gauge the thickness. It is advisable to check the thickness with a mil gauge as the application proceeds. A mechanic wearing golf shoes should roll the floor to ensure an even distribution and remove trowel marks. In either a slurry or double broadcast application, use a brush to trim around floor drains, doors, etc. When working the resin up to the cove base, be sure to apply the material to achieve a straight line at the cove radius. It is better to bring the material onto the vertical part of the cove and allow it to flow backdown. If the material is not brought completely up to the vertical, a cavity or ridge may result in the finished floor.

BROADCASTING THE AGGREGATE

Broadcast aggregate is normally 20 or 30 mesh Monterey or silica sand or decorative color quartz. Twenty-mesh aggregate adds about 10 extra mils to the floor thickness and allows for a more slip-resistant finish texture. **Plan to have 3/4 pound per sq. ft. of aggregate available for each broadcast.** A portion of this will be recovered for future use.

The method of broadcasting the aggregate is very important, especially in slurry-broadcast applications. Normally, a mechanic wearing golf shoes walks onto the wet resin to broadcast the aggregate. Broadcasting should be done as soon as possible after the resin application so that spike marks left in the resin will flow back before the broadcast. The broadcaster must be certain that the base material has completely self-leveled before broadcasting. Trowel marks that have not been properly back rolled will absorb more aggregate than the rest of the area and show up in the cured system as a ridge. The broadcaster should raise his feet vertically when walking and avoid scraping or twisting. If this does occur, reroll the area before broadcasting aggregate.

Broadcast the aggregate like sowing seeds for planting but cast somewhat higher so that the aggregate falls as vertically as possible into the wet base coat. Avoid throwing down to the surface or dropping handfuls. If broadcasting from close range, hold hand high, palms up and allow the aggregate to fall between the fingers. If broadcasting into a slurry base, a greater amount of aggregate is being absorbed and it is important to allow the floor thickness to build up slowly. Broadcast a portion of the floor, let it absorb and return to broadcast again.

Broadcasting must be done to complete refusal. The broadcaster must monitor areas previously done and look for absorption areas. They will appear as shiny spots. Broadcast additional aggregate until complete uniformity has been achieved. It is important not to broadcast the edge that joins the next section to be base coated. Leave a 2-foot strip unseeded to permit the base coat to tie into the next section of the floor. Remove tape as you proceed with broadcasting. Never walk on a freshly broadcast section because the golf shoes will leave marks in the finished floor.

SWEEPING, SCRAPING AND SECOND BROADCAST (if double broadcast)

After the base resin has cured, sweep away the excess aggregate with a stiff bristled broom. The floor must be protected from soiling, especially with black heel marks. Scrape the surface well to remove excessively projecting grit and to smooth any rough areas. A drywall scraper, flat trowel or razor blade scraper works well for this. After the floor has been scraped, sweep again. Vacuum hard to reach areas. Floor drains must be re-taped for the second broadcast.

Floors being done by the double broadcast method now receive another coat of base resin applied with a rubber squeegee. This application may be either the neat unfilled resin or if the system is a double slurry broadcast, 2 parts resin to 1-part slurry filler. Pour the mixture onto the floor and spread with the squeegee using a light but steady pressure. This leaves a somewhat textured surface. Use a brush for the trim work. Again, be sure to get the material up to the vertical portion of the cove vase. A mechanic wearing spiked shoes should back roll to ensure an even distribution. Broadcast again to refusal being aware that missed saturation spots will show as irregularities in the finished floor.

Note: Quartz is expensive both in cost of material and in shipping. One of the major manufacturer providers of quartz is Torginol and we are a distributor for them. You may use their website for quartz color choices and we will assist you with your order needs for direct shipping. Their website is <https://www.torginol.com/quartz-2/>. *A less expensive option may be locally available 30-grit dry sand or silica sand.*

APPLICATION OF FINISH SEALER COATS

Sweep and scrape the floors as described above. Mix enough material to brush coat the cove base before finish coating the field of the floor. **The cove may need to be coated two times to ensure a smooth surface.** Use material sparingly for each coat to avoid puddling at the bottom of the cove.

Any areas not uniformly broadcast must be addressed at this time. Brush or roll the epoxy sparingly onto the missed area and lightly sprinkle additional quartz onto the area using the fingertips. Allow to set at least 30 minutes before carefully applying the finish coat material.

For applications where only minimal slip-resistance is required: An “orange peel” texture should be achieved. The first glaze coat should be applied with a squeegee to leave a medium texture. After this coat has cured firm, sand the entire floor with 60 grit sandpaper. This may be done with a sanding block, pole sander or floor machine. If using a floor machine, move the machine at a steady speed and do not over sand any area. Sweep the sanding dust well with a soft bristle broom. Apply 1 coat of SL-P60 or WB-P53 with a squeegee at 300-400+ sf per gallon. Back roll to ensure an even distribution.

To achieve a medium textured floor: Pour the resin (CA-FD Epoxy) onto the surface and spread with a rubber squeegee as described above. Coverage should be 100 square feet per gallon. Again, a mechanic wearing golf shoes should back roll the area to ensure an even distribution.

If the surface texture is to be aggressively slip-resistant, the topcoat material is roller applied. Mix a small amount of CA-FD in a 5-gallon pail. Material may be thinned with Acetone per product information sheet. Pour off a portion of the mixed material into a separate pail and use to brush trim where necessary as the application proceeds. Leave the remaining material in the mixing pail and apply by the dip and roll method using a 1/2-inch nap roller. Do not pour the resin onto the floor. The intent is to apply the material sparingly, approximately 150-175 square feet per gallon. A crew member wearing spike shoes should reroll each area to ensure an even distribution.

If applying a color quartz system outdoors, epoxy cannot be used in any portion of the topcoat system. For these applications use 2 or 3 coats of SL-P60 or 1-2 coats of Polyurea 80C, depending on the surface texture desired.

For commercial kitchen applications, **the fry line may need to receive a special topcoat system** applied on top of the unsealed aggregate. If the floor is done with pigmented resin, a 2:1 slurry is made using novolac-type epoxy and slurry filler. The mixture is poured onto the surface and smoothed with a flat trowel to leave an additional 60 mil thickness. *If you need a novolac-type epoxy for extreme chemical and heat resistance, ask for Granicrete’s Novolac SA220.*

Slip resistance is achieved by broadcasting #12 bleached aluminum oxide into the wet slurry. If the floor is a color quartz floor, mix 2-parts clear novolac and 1-part blended

color quartz. Apply with a flat trowel in the manner described above and broadcast either #12 bleached aluminum oxide or #11 trowel grade quartz into the wet slurry for slip resistance.

QUARTZ Option 1: Single Broadcast System 2-day

CA-FD (Pigmented or Clear)

Broadcast Quartz – ¾ lbs. per square foot.

Sand to knock down high areas and clean

Seal (WB-P53, SL-P60, Polyurea-80)

CA-FD is the base epoxy used for a wide array of applications. Follow product information sheets for proper coverage's and make sure to broadcast aggregate (quartz) into the epoxy with 20 minutes of application. Choose a topcoat sealer based on the requirement of the project.

Reference the product information sheets in Granicrete University for performance and chemical resistance

KEY POINTS FOR OPTION 1 – QUARTZ

- Residential – all commercial
- High traffic, good chemical resistance
- Thick build from double broadcast and sealer
- Installation 3-4 days
- Drive time – 7 days

QUARTZ Option 2: Double Broadcast 3-4 Day

CA-FD (Pigmented or Clear)

Broadcast Quartz – ¾ lb. per square foot

Sand to knock down high areas and clean

CA-FD (Pigmented or Clear)

Broadcast Quartz – ¾ lbs. per square foot.

Sand to knock down high areas and clean

Seal (WB-P53, SL-P60, Polyurea-80)

KEY POINTS FOR OPTION 2 – QUARTZ

- Residential-Heavy Commercial
- High Traffic, HIGH Chemical
- Thick Build
- Installation Time After Prep – 4 days
- Drive Time – 7 days