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Description of the Milestone system

Milestone is a cement-based topical coating which, at its core, has 2 main components: the acrylic based liquid called Milestone Acrylic Liquid and the Milestone Hybridized Portland Cement powder. Milestone can be integrally pigmented to almost any color and it can be used in conjunction with a variety of aggregates to achieve unlimited combinations of color and texture. In addition, it can be applied to almost any substrate and sealed to hold up in most environments. Using different techniques and preparations, Milestone will adhere to concrete, stucco, brick, wood, Formica, tile, sheet rock, paint and more. It can be used as the final surface for floors, interior and exterior walls, counter tops, fireplace surrounds, shower walls and pans, tub surrounds, as well as decks and patios. Generally, any shape that you can build out of wood, metal lath, or high-density foam can be finished with Milestone. In the end, the use of Milestone is limited only by your imagination.

The following pages provide an overview of common installations scenarios, the tools and materials used, and some of the tricks and shortcuts that we developed over more than 10 years of successful installations. Milestone is an incredibly versatile material and everybody that has worked with it for a period of time comes up with their own technique and style of using and applying it. These instructions will provide you with a good starting point and make your first project(s) a rousing success. If you have questions that are not answered here, feel free to contact us at info@artisanfinishes.com or call us at 206.340.0830. As the sole distributor of Milestone, we want to do our best to help you succeed.

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How to get started

Milestone Acrylic Liquid is available in 1 gallon and 5 gallon containers and all Milestone Cement comes in 5 gallon pails. We offer a starter kit that includes Milestone Acrylic Liquid, Milestone Base Coat Mix and Milestone Cement for people that have never worked with Milestone before or just need a small amount of each material. Refer to our instructions on [sample making](#) when using this kit.

We also offer Sample [Color Packs](#) that, used in conjunction with the Milestone Starter Kit, generate 16 oz of colored Milestone Acrylic Liquid, enough to make at least a couple of samples. Since the starter kit comes with 1 gallon of Milestone Acrylic Liquid you can use up to 9 different Sample Color Packs with one kit. This is a great way to gain experience working with Milestone while you're starting to build a library of samples to show to your customers.

Once you have all your Milestone supplies, you will need the proper tools.

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Tools

The tool most commonly used to apply Milestone is the trowel. Occasionally, you may also want to use putty or surface knives, Bondo squeegees and in a pinch your hands. We use a variety of trowels, depending on the kind of application as well as personal preference.



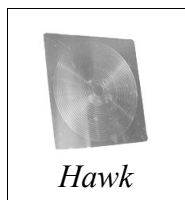
Venetian Trowel

For base coats, we will usually use a standard steel concrete trowel (12" to 24" in length.) These trowels are stiff-backed, making it easier to keep your application level. For the installation of the Finish coats we use either Pool or Venetian trowels, available in a variety of sizes. Pool trowels are more flexible than Venetian trowels. The selection



Pool Trowel

of a Finish trowel is mainly based on preference. When working on lightly colored finishes that use no aggregate in the top layer, we may use a Fiberglass trowel to avoid dark burnish marks that steel trowels may



Hawk

produce.

Anytime you work on a vertical surface, you will want to use a plasterer's hawk to hold your material. Use a mud tray to hold your material when you are using a putty knife or a Bondo squeegee. Bucket scoops are essential for



Fiberglass Trowel

transferring the mud from your mixing bucket to the hawk or mud tray. There are a variety of corner tools on the market: inside and outside corners, and set or adjustable configurations. You will want to experiment to see which you prefer. Straight edges, levels and framer's squares are used frequently to shape or level the surface. In addition, you will need sanding blocks, Scotch-brites, [mixing supplies](#), tin snips and/or wire cutters, power drills, mixing brushes and stir-sticks, and taping supplies.



Versa Trowel

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Mixing

Setting up your mixing station is an important step. You want to choose a location that is adjacent the surface you're working on without having to step over or around it all the time. Keep in mind that you will produce cement dust as well as the occasional splash of water or mud. Ideally, you'll choose an area large enough to store your materials there as well. Cover the floor with tarps and have a couple of 5-gallon buckets with water around to clean your tools and drill paddle. Sometimes, when working in occupied quarters with no outside space available, you may have to tent in your mixing station, in order to avoid contamination of the surroundings.

We usually mix in a 5-gallon bucket, using a 1/2" drill and a paddle mixer. When mixing Milestone Cement and the Acrylic E without aggregate, you can use a squirrel cage

instead of the paddle mixer. A bucket scoop is handy to transfer material either to a hawk or to the surface you're working on. Add up to 1 ½ gallons of E liquid first then add some of your dry ingredients. Mix, then add more dry ingredients and repeat until you have the consistency best suited for your application. If you are mixing your color coats, make sure to hold some colored liquid E back for [re-tempering](#). On any but the smallest jobs it is advisable to have a designated “mud boy”, somebody that keeps you supplied with a fresh mix and that can clean your tools whenever necessary.

Open time – re-tempering

One of the advantages of Milestone is that, unlike your standard water/cement mixture, it can be re-tempered. While it will thicken rather quickly after the initial mixing, you can add Milestone Acrylic Liquid to the mix and return it to the desired consistency without losing any of its properties. This process can be repeated numerous times over a period of several hours.

Important: If you are using colored liquid, make sure to stir it with a bristle brush prior to adding it to the mix. The pigments tend to settle within a relatively short period of time. The color of your finish will gradually lighten if the pigment is not re-suspended every time before re-tempering. Since we usually mix in 5-gallon buckets, we tape a 2” brush to a long stir-stick in order to reach the pigment at the bottom of the bucket.

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Coloration

Color Packs

General

Milestone uses integral color, usually adding pigment to the 2 layers that make up the [Finish coat](#). The liquid pigment is added to the Milestone Acrylic Liquid prior to mixing with dry ingredients. Artisan Finishes provides a number of popular Color Packs for 1, 2 and 5 gallon mixes. These Color Packs can also be mixed with each other to achieve additional tones. Small sized packs for making [samples](#) are also available. You can find images of all the colors available on our website at

<http://artisanfinishes.com/pages/colortextures/colortextures.htm>.

Since color representation varies from monitor to monitor we supply color references, usually using Benjamin Moore color chips. Please note that we did not design our color line to match BM colors. Instead we based our line on colors popular with designers and home owners. The referenced BM colors were selected to provide the closest match available. Our website provides enlargements of our colors with the related BM color chip right on the sample to help you see any existing differences.

Using Color Packs

Some of our pigments are highly concentrated. In its most concentrated form, our pigment will take a long time to dry and exposure to moisture will reactivate it even after

days have gone by. As a general rule, you should avoid contact with the skin by wearing rubber gloves during mixing and clean up any spills of pigment immediately. Use at least a 2 gallon bucket when mixing Milestone Acrylic Liquid and a Color Pack for 1 gallon. Make sure you have a bristle brush available. Empty the Milestone Acrylic Liquid into the bucket followed by the pigment from the Color Pack. Some of the pigment will cling to the inside and the lid of the container. Wearing the rubber gloves, submerge the container into the Milestone Acrylic Liquid in the bucket and, with the help of the brush, wash all remaining pigment into the Milestone Acrylic Liquid. Repeat with the lid. After washing all pigment into the Milestone Acrylic Liquid, stir the mixture with the brush until all the pigment is suspended. When mixing color for 5 gallons of Milestone Acrylic Liquid, you will need two 5 gallon buckets. Divide the liquid equally between both buckets, then add the pigment to one of them, following the above instructions. When mixing 5-gallon batches, we tape a 2" brush to a long stir-stick in order to reach the pigment at the bottom of the bucket. Next, pour the liquid back and forth between the 2 buckets until it is completely mixed.

Important: As you're proceeding with your installation, make sure to stir the liquid with a bristle brush prior to combining it with the dry parts of your mix and during [re-tempering](#). The pigments tend to settle within a relatively short time and the color of your finish will gradually lighten if the pigment is not re-suspended every time before mixing or re-tempering.

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Custom coloring

If you or your customer are looking for a color that is not part of our color line, you have the option of using the 12 colors that provide the base of our color line and mix them yourself to create a custom color. One of the biggest concerns in custom coloring is reproducibility. You've created a sample, you showed it to your customers, they love it, and they want their wall, counter or shower to look just like it. The only way to meet that expectation is to establish a formula when you first create your sample, which means measuring the pigment. At Artisan Finishes, we have a color machine that lets us dispense amounts as small as 1/96 of an ounce fairly accurately. While you can find a used color machine for \$200-\$300, not everybody is willing to go that route. Your alternative is to measure with tea-and tablespoons. Keep in mind, measuring with tea-and tablespoons will be less accurate than using a color dispenser. You will want to address that when you talk to your customers. Let them know that the sample provides a general range and that variations are part of the process. In addition to the segment on [samples](#), here are some tips for the custom sample process:

Keep a written record of what you're doing! The whole custom sample making process is only useful if it result in a reproducible formula.

If one of the existing color packs is close to the desired color, start with that pack and add pigment to it. Start with at least 16 oz of tinted or un-tinted Milestone Acrylic Liquid. On very light colors, you may need more liquid since the pigments measured in fractions of a teaspoon may be too strong for 16 oz. If the hue of your color is correct but the light/dark value is wrong, you can add or subtract a few ounces of Milestone Acrylic Liquid to lighten or darken the color accordingly.

Keep your basic pigments in squeeze bottles and squeeze into clean measuring spoons. Scooping the pigment with the measuring spoon out of a container will add additional pigment from the outside of the spoon causing an inaccurate measurement. Wash all of the pigment from the spoon into the Milestone Acrylic Liquid. Stir your sample mix with a bristle brush to suspend all of the pigment evenly. The pigment will start to settle after a while, so re-stir every time before using. This applies to mixes for samples as well as for installations.

Since you will almost always seal your installation, you don't know the final color of your sample until you have sealed it with Milestone Urethane. Prior to sealing your sample, you might want to apply a 1" strip of tape to one side of the sample. This will allow you to check your unsealed installation against your unsealed sample. For more accurate results, apply a strip of tape prior to applying the second [Finish coat](#) to be able to check on the first Finish coat as well. If for some reason your color mix is off, you can still make adjustments to it before applying the final [Finish coat](#).

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Samples

Why do I need to do a sample?

In the course of our daily operations we get a lot of calls from customers. The majority of these calls fit into 2 categories: questions on how to use Milestone in a future installation and questions about ongoing Milestone installations. In trying to help the callers that fall into the second category, we find ourselves asking the same question time and again: Did you do a sample? And the answer we're getting more often than not is: No, I didn't.

So let's be clear:

Prior to any installation, as part of selling your work to a customer, even when using Color Packs, create a sample.

Everybody that buys materials from us will hear or read this at least once. Nevertheless, we regularly talk to customers facing some problems that could have been avoided by doing a sample. Milestone is a unique material in many ways and one of the aspects of that uniqueness is that you can't just go and use it like some other material that you're familiar with, at least not if you want results similar to the ones shown on our website. Milestone is installer-specific. Milestone installers develop their own style of application and, eventually, their own look. That's why we don't offer kits of samples done by us. Instead, we offer a Milestone Starter Kit and Sample Color Packs that you can use to create your own sample kit. That way, you'll gain experience working with Milestone and you'll generate a library of samples that reflect your own style. The samples in your library will provide an accurate representation of your work to your customers. After more than 10 years of installing Milestone, we still create samples for every installation we do. At Artisan Finishes, we offer total customization in regards to color and texture; we want to show our customers exactly what it is they will be getting. You have the option of using our Color Packs, which frees you from having to do a [sample to match color](#), but you still want to see how the color that you or your customer selected comes out when you install it.

So, please, do a sample.

How to do a sample

Usually we will do samples on 2' x 2' pieces of 1/8" masonite, found at Home Depot or Lowe's. Apply the Milestone on the smooth, tempered side. As you will see in our section on [base coats](#), we will apply a coat of Milestone Base Coat Mix prior to installation of the Finish coats in almost all situations. We, therefore, apply the same base coat on our sample boards, a process we refer to as "basing out". Our preferred set-up for plastering sample boards is to work on a piece of 3/4" plywood which is slightly smaller (1/2" to 1") than the actual sample board. Raising the sample board off your work surface makes it easier to deal with the edges of the board and you're less likely to pick up debris from your work surface. Basing out a few sample boards is a good first experience in working with Milestone. You do not need any colorant in your Milestone Acrylic Liquid and you're basically troweling to the thickness of the aggregate. You do not have to worry about ridges from the edge of your trowel as long as you come back to sand your board(s) before the mix has totally set up. See [sanding, leveling and shaping](#) for more information. Once your base coat has dried completely, you can apply the [Finish coats](#).

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Substrate preparation

General

Have all surfaces free of debris and dust. Protect surrounding areas and tape off the edges of your installation wherever necessary. Apply bonder if installing over Formica, tile or foam.

Dealing with existing cracks

We frequently deal with concrete slabs that have existing cracks or cement board assemblies with gaps on the seams. Depending on the amount and size of the cracks, we may just fill them with Milestone prior to installation of a base coat or we may have to install an anti-fractal system. In either case, we use a mix of the Milestone Base Coat Mix and Milestone Acrylic Liquid to fill the cracks as the first step. Remove any dirt, dust and loose debris from the crack and surrounding areas. Ensure your mix is liquid enough for the Milestone Acrylic Liquid to penetrate the surrounding concrete. This will ensure proper adhesion. Over-fill a little bit and sand down after the mix has set up enough. Let your fills dry completely before moving on to the next step. For small, isolated cracks, this will be sufficient and you can now proceed to the first [base coat](#). At times, we encounter a floor that has so many cracks that simply filling them may not prevent some of them from telegraphing through after the finish coats have been installed. For this scenario we install a combination of Red Gard and fiberglass mesh, similar to the vapor barrier installed in [showers](#). Apply the Red Gard with a putty knife or a trowel and embed the fiberglass mesh into it, forcing Red Gard through the mesh. You are essentially using it as an adhesive for the mesh. After the coat has dried, apply a second coat of Red Gard mixed with #70 grit sand at a ratio of 1 part sand to 2 parts Red Gard. This will provide a

mechanical tooth for the subsequent application of Milestone. You will be ready for your first [base coat](#) after the second coat of Red Gard has dried completely

Dealing with residue of previous materials

At times, you may come across a floor or other surface that still has residue from previous materials(i.e. glue from vinyl or carpet or unknown substances.) You can bury these residues in a layer of Milestone Base Coat Mix but there is a risk for colors to leech through from the residue to the finish levels. The ideal approach is to shot-blast the entire surface prior to any Milestone application. Unfortunately, this is not always an option due to budget or other considerations. If you cover residual material with a Milestone base coat and encounter discolorations after your mix has dried, do not proceed with the installation of the Finish coats. Instead, apply another base coat. If you have reason to believe that the discolorations may reappear through this coat as well, cover the entire surface with a coat of pigmented (so you can see where you applied it) Shellac, let dry completely and then install the next base coat. The layer of Shellac should effectively block any future discolorations and you can proceed with your next step once the base coat has dried completely.

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Base coats

General

There are several reasons for applying a base coat prior to installing the Finish coats.

- You are creating a surface that you're familiar with; you know how your tools and your material will behave once you begin work on the Finish coats.
- A base coat allows you to bury a certain amount of unevenness in your existing surface. If you have installed a vapor barrier or an anti-fractal membrane, your base coat will cover the texture of the fiberglass mesh and any (small) lumps of Red Gard that may stick out.
- If you are working over brick or tile, the base coat will fill in the mortar or grout lines.
- If your surface has residue from previous materials, you can bury those in a base coat.
- Review the section on general [substrate preparation](#) for all of these scenarios.

Application

Make sure that the surface is free of dust and loose debris prior to applying your base coat. Mix Milestone Base Coat Mix and Milestone Acrylic Liquid to the desired consistency. If you have any colored Milestone Acrylic Liquid from a previous job you can use it in a base coat since it won't show through the Finish Coats. Apply using a cement trowel of appropriate size. If your existing surface is level, apply enough pressure to trowel only to the thickness of the aggregate in the mix. This allows you to use the existing surface as a guide, reducing the need for further leveling. Sand a base coat with a #80 grit sandpaper after it has taken up sufficiently.

Sanding, leveling and shaping of base coats

One of Milestone's unique properties is the way that it can be sanded. As it sets up, it reaches a stage where it can be easily manipulated with sand paper, the edge of your trowel, a straight edge or a framers square. Usually, you will see some color changes in your surface, indicating the beginning of the sanding state. Another way of checking is to use a sheet of # 80 grid sandpaper and start sanding with light pressure. If your sandpaper clogs up right away, it's still too early. At the proper time you will be able to sand a 100sf wall with one sheet of sandpaper without it ever clogging up. There are many advantages to this property of Milestone. For example, when applying the base coat, you don't have to worry about ridges left behind by the edge of your trowel, as long as you come back at the right time and carve them down with a straightedge or even the edge of your trowel. The carving technique works great for leveling areas as well. Straightedges are available in many sizes. We use sizes ranging from 4' to 10', depending on the project. Ideally, you'll use a straightedge in conjunction with a level. Using a framer's square on a counter top will let you shape the top and the edge at the same time. Any outside corner can be shaped by over-building it initially and then sanding or carving it down. Using a straightedge as a guide is a great way to get a crisp corner. These techniques require some practice, so as always, we recommend working on a [sample](#) to familiarize yourself with the process.

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Finish coats

Milestone Finishes are usually comprised of 2 coats, both of them colored. The first coat mix will always include an aggregate. Different size aggregates are used for different finishes. The mix for the second coat may or may not include an aggregate. This section describes the 2 basic finishes that are featured on our website in the Colors/Textures page.

Non-aggregate finish

The non-aggregate finishes are, in their appearance, reminiscent of Venetian plaster. They have a moderate to strong monochromatic modeling as their signature character. So, if you're having a uniformly sage-green mix, you will have a finish that has areas of light, medium, and dark sage-green to the point of looking like several colors have been blended during the troweling process. Begin with a mix of Milestone Base Coat Mix and colored Milestone Acrylic Liquid. For this first finish coat use a ratio of 9oz of liquid to 16oz of powder by volume. Trowel evenly, with enough pressure to have your trowel follow the underlying surface. Slightly larger size pieces of aggregate in your mix will sometimes create "comet trails". For this particular finish you will want to keep them to a minimum. Since your top coat has no aggregate to fill them in they may reappear as dark

lines after you install the top coat. To fix a ‘comet trail’ trowel across its line without adding new material. Cover the whole surface in an even coat, then let dry overnight. Sand lightly with 100 grit sandpaper. For your topcoat, mix Milestone Hybridized Cement and colored Milestone Acrylic Liquid to the consistency of honey (9-10oz of liquid to 16oz of powder by volume). Apply small amounts at a time, slightly overlapping previously covered areas. The aforementioned modeling will happen more or less automatically; your concern as the installer is to apply the mix in such a way that the resulting finish looks natural and organic. You want to avoid “mechanical” looking marks, by which I mean vertical or horizontal lines as well as the “arches” frequently seen in traditional stucco plastering. Applying Milestone Finishes is not about covering as much area as fast as possible. Instead, you'll want to work at about one to two square feet of surface at the time. This approach will allow you to avoid mechanical lines, make it easier to maintain a wet edge, and let you control your color movement. Because of the differences between Milestone and other plasters, you should familiarize yourself with how Milestone acts before attempting an actual installation. The best way to familiarize yourself with the product is through [samples](#) as described in this manual.

Summary for no-aggregate finish:

- Mix Milestone Base-Coat Mix, and pigmented Milestone Acrylic Liquid.
- Apply to prepared surface and let dry completely.
- Sand lightly with #100 grid sandpaper or equivalent.
- Mix Milestone Cement and pigmented Milestone Acrylic Liquid.
- Apply small amounts, working on 1-2 sf at a time. Avoid mechanical lines.
- Let dry completely, then sand with #150 grit sandpaper.
- Apply sealers appropriate for the location.

Aggregate Finish

Aggregate finishes are quieter, less modeled in their appearance. They can be troweled to a smooth or textured finish. Begin with a mix of Milestone Base Coat Mix and colored Milestone Acrylic Liquid. For this first finish coat use a ratio of 9oz of liquid to 16oz of powder by volume. Trowel evenly, with enough pressure to have your trowel follow the underlying surface. Comet trails are not as much of a concern with this finish. The aggregate in the top coat will fill them and they will not show in the way they might show in a non-aggregate finish. Cover the whole surface in an even coat, then let dry overnight. Sand lightly with 100 grit sandpaper. For the top coat, use a mix of 2 parts Milestone Base Coat Mix and 1 part Milestone Cement along with colored Milestone Acrylic Liquid. Apply small amounts with enough pressure to fill the porosities of the first coat. Smooth out or texture the top as desired. Make sure to maintain a wet edge, especially when you want a smooth finish.

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Coverage Rates

We estimate material based on the amount of Acrylic Admix used per square foot. When we measure dry parts for the purpose of estimating, we also measure them by volume. Therefore, 16 oz of Base Coat Mix means half a quart container of Base Coat Mix. Following are several ratios that will be helpful in calculating your material needs.

Base Coat uses 1 oz of Milestone Acrylic Admix per sf
160 oz of Milestone Acrylic Admix + 1 pail of Base Coat Mix = 160 sf of Base Coat

Top Coat uses .5 oz of Milestone Acrylic Admix per sf
320 oz of Milestone Acrylic Admix + 1 pail of Milestone Cement Powder = 640 sf of Top Coat

Filling metal lath uses 4-5 oz of Milestone Acrylic Admix per sf

When mixing small batches, use the following ratios as a starting point, then make adjustments for a thicker or thinner mix. Keep in mind that your batch will thicken noticeably within 10 minutes, potentially requiring you to re-temper the mix.

Base Coat: 8 oz Milestone Acrylic Admix with 16 oz Milestone Base Coat Mix by volume.

Top Coat: 9 oz Milestone Acrylic Admix with 16 oz Milestone Cement Powder by volume.

Here are some approximate ratios for whole pails of material:

- 5 gallon of Milestone Acrylic Admix uses (2) 30lbs pails of Milestone Cement Powder

or

- 5 gallon of Milestone Acrylic Admix uses (4) 40bs pails of Milestone Base Coat Mix

or

- 5 gallon of Milestone Acrylic Admix uses (2) 40bs pails of Milestone Base Coat and
(1) 30lbs pail of Milestone Cement Powder

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Interior Walls

General

Interior walls should be drywall, prepared to a level 4 and primed with acrylic paint. Milestone will adhere to any acrylic paint, allowing you to go right over existing painted walls, as long as the paint adheres well to its substrate. We have even installed Milestone over existing wallpaper but only after ensuring that the wallpaper will not de-laminate when wet.

Application

Protect all surrounding areas. In most instances you will apply two [base coats](#) over the entire surface. The first coat does not have to be colored. Level the walls and straighten the edges as described in the base coat section. Then apply your [Finish Coats](#) and [Sealers](#).

Exterior walls

When we install Milestone on exterior walls, we usually have a stucco company install their system, from the vapor barrier to the scratch and brown coat. About 2 weeks after the brown coat has been applied we will come in and apply our base coat, using the Milestone Base Coat Mix. We will also work on concrete walls, which allows us to apply the base coat(s) right away, providing that the walls are clean and free of cracks or ridges.

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Fireplaces

The standard fireplace installation will be over existing brick. Check for loose bricks or mortar and make sure to remove all loose material prior to applying your first base coat. If the fireplace has been painted, make sure that the paint adheres well to the brick. Any paint that flakes off will have to be removed completely. As always, Milestone will adhere to the material it is applied to but if it's immediate substrate de-laminates, Milestone will come off with it. Make sure to read the sections on [substrate preparation](#) , [base coats](#) and [sanding, leveling and shaping](#) prior to beginning your installation.

In order to deal with the mortar lines of the fireplace you will apply at least 2 uncolored base coats. Use a mixture of the Base Coat Mix and the Acrylic Admix. Mix to a consistency that allows you to work off a hawk but wet enough to ensure some saturation of the substrate. Do not apply too much material at a time to avoid sagging. Your first coat should fill in the mortar lines and put a thin layer over the actual brick. Let this layer take up and then sand or carve it as described in [sanding, leveling and shaping](#)

Apply a second coat after the first coat has dried completely, usually the following day. This coat focuses on leveling the surface and building the corners. A straightedge is an essential tool for both elements. After the second base coat has been sanded and carved, you should have a nice level surface. At this point it is ok to apply your first [Finish Coat](#), even if you can still see the mortar lines. If the mortar lines are still visible after the first Finish Coat has dried completely, do not apply the final Finish Coat since it is not

guaranteed that it will completely cover the mortar lines. The only way to make sure that the lines won't show in the final finish is to apply another colored base coat, let it dry completely, and confirm that the lines are gone. At that point you are ready to apply the final Finish Coat, followed by the [Sealers](#).

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Floors

Over concrete

Going over existing concrete is one of the easiest ways to apply Milestone. If your concrete floor is clean and level for your purpose, you can apply the first Finish coat directly over it. If minor leveling is required, you will want to apply an uncolored Base Coat prior to the installation of the Finish coats. If your slab requires crack control or severe leveling, read the section on [substrate preparation](#) and [sanding, leveling and shaping](#).

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Over wood

Any time we install Milestone over wood, we use a layer of 3.4 metal lath on top of the wood. The main reason is to suppress movement in the substrate as much as possible. The most likely location for movement is in the joints of different pieces of plywood. Therefore, make sure that you offset the seams in the metal lath with the seams in the plywood. This applies to flat surfaces as well as corners like the ones you'll find on steps. Do not butt pieces of metal lath in a corner even though it may seem the most convenient place. In new construction, we specify 2 layers of plywood with misaligned seams. We like the 2 layers to be glued to each other using a polymer modified Thinset that is applied with a 1/4" x 1/4" notch trowel. To attach the metal lath to the plywood we use either metal lath screws or Durock cement board screws. These screws are designed to exist in an alkaline environment and won't cause any rust stains. We use flat metal lath and we don't overlap the seams, we butt them against each other. This allows you to use the top of the lath as a guide for your trowel when you're filling it in and it keeps you from having to level out the extra buildup around the overlaps. We use our Milestone Fill Coat Mix to fill in the metal lath. If you can find the right kind of sand locally, you can add 1 part sand to 2 parts Fill Coat Mix to give the mix even more body. Any grit between #20 and #70 will work. It usually takes 2 coats to fill in the metal lath. In most scenarios, we will apply the second coat before the first coat has dried completely. Before the second coat has dried completely, we will sand it as described in [sanding, leveling and shaping](#). Being able to "carve" your second coat into a level surface is invaluable. It is important to schedule yourself in a way that allows you to do the carving process at the right time. If you're starting to fill in the metal lath for several hundred sf of floor in the afternoon, you should be prepared to work into the night in order to carve your floor. You might be able to walk away for a couple of hours, have dinner, and come back. Site conditions will always affect drying times and as you gain experience you will be more proficient in judging the time that it will take for a floor to dry to the right stage. Once

your fill coats have dried completely you're ready for a base coat. Use the Milestone Base Coat Mix and uncolored Acrylic Admix for this coat. During the application of this coat you will still have the opportunity to do some leveling if necessary. The Base Coat Mix has a finer size of aggregate than the Fill Coat Mix but it can be carved in just the same way. Make sure to vacuum the floor before applying the base coat. If you are still in need of leveling after one base coat, you can always repeat the process. Once your final base coat has dried completely you are ready for [Finish coats](#).

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Over tile
coming soon

Counter tops
coming soon

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Showers

When we install Milestone in a shower, we start with the installation of the vapor barrier. At that point, we would like the walls to be set up in a certain way to reduce the possibility of movement in the substrate. You can do this set-up yourself or have a contractor follow these instructions. Start with a layer of 1/2" plywood on top of the studs, blocked on the seams. Next, use Thinset, applied with a 1/4" x 1/4" notch trowel to embed the cement board (still screw the cement board to the plywood). Make sure to



2: Fiberglass mesh embedded in Red Gard

misalign the seams between plywood and cement board. Once the cement board is installed, fill any gaps in the cement board with Milestone Base Coat / Milestone Acrylic Liquid mix. Then, using a putty knife or trowel, use a Milestone Cement and Milestone Acrylic Liquid mix to embed 4" reinforcing mesh at all the joints. After the seams are completely dry, cover all wet walls with fiberglass mesh, embedding the mesh into Red Gard or a comparable waterproofing membrane. This will establish the vapor barrier. If you are building the shower pan out of Milestone run the mesh and the Red Gard into the drain as well. Apply the Red Gard with a putty knife or a trowel, forcing it through the mesh.



4: First base coat over dry wall

Illustration 1 shows the process of embedding a 4" mesh with Milestone on the seams of the cement board. Illustration 2 shows the fiberglass mesh embedded in Red Gard. Illustration 3 shows two coats of Red Gard applied to the wall. Illustration 4 shows the first base coat applied over the dry wall.



1: Embed 4" mesh with Milestone on the seams of the cement board



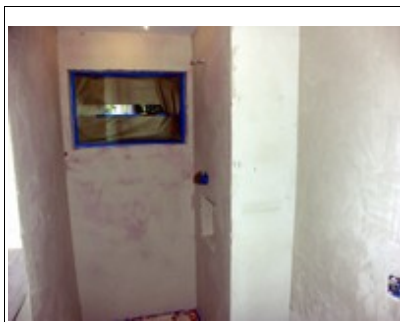
3: 2 coats of Red Gard

The mesh does not need to be completely covered on this first coat (see illustration 2) but you want to make sure that it adheres well to the cement board. Let the first coat dry completely. For the second coat, add 1 part of #70 grid sand to 2 parts of Red Gard. This will give your surface a mechanical tooth, making it easier to apply the Milestone mix. None of the fiberglass mesh should be visible after the second coat of Red Gard has been applied (Illustration 3). Once the second coat is completely dry, you are ready to install your first [base coat](#). In illustration 4 we are applying a base coat to the dry walls of the

bathroom while the second coat of Red Gard is still drying. Usually, some amount of leveling will be part of this coat. Use a straightedge and a level to check the walls before and while you're working. The better the cement board or the drywall was hung, the less leveling you'll have to do. Sometimes existing conditions are so bad that you will want to judge your work by how level it looks rather than by how level it is. You can choose between building thickness gradually or overbuilding and carving back down to level (see [leveling of base coats](#)). On corners, you can use a straightedge as a guide for your trowel. For recesses like the one shown in illustration 5, use a surface knife instead of a trowel or a putty knife to apply your mix. Sometimes, one base coat will be all it



5: Using straightedge and level on corners



6: First Base Coat

takes to get your surface ready for the finish coats, but frequently you will have to apply a second coat to get things just right. Keep in mind that you do not want to deal with any leveling or straightening by the time you start the finish coats. Illustration 6 shows another reason for a second base coat: tight leveling of the first coat resulted in the color of the Red Gard showing through the first base coat. Illustration 7 shows the same area after the application of a second coat. The close-up in illustration 8 shows what you want your

substrate to look like prior to the installation of the finish coats: smooth, level surface and crisp corners. When you apply the first finish coat over this surface, you can focus on troweling to the thickness of the

included aggregate, letting the existing surface guide your trowel.



7: Second Base Coat



8: Second Base Coat Detail

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Sealers

Milestone is a cement based product and does not necessarily need any sealers. Unsealed Milestone will darken any time it is exposed to moisture and lighten as it dries out. It is also subject to staining, which is the reason we seal almost every installation. All the samples of the finishes in our color line were sealed using Milestone Cementic Urethane and Milestone Cementic Wax. There are many different sealers on the market. We have done extensive testing and selected sealers based on their performance in the following categories:

Stain control
Hardness
Longevity
Ease of use

With the exception of the Miracle 511, all sealers referenced are water-based sealers. We recommend Padco Pads whenever the use of a painting pad is required. While all pads shed hairs, Padco's seem to do it to a lesser degree than others.

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Interior Walls and Fireplaces

Sand the final finish coat with #120 - #150 grit sand paper. Apply Milestone Cementic Urethane with painting pad. Use circular motions while applying. After it has had a chance to be absorbed by the surface, rag the remaining urethane in, using a clean cloth and circular motions. Start at the bottom of the wall and work your way up to avoid dripping onto the unsealed surface. If drips occur, wipe them up as soon as possible. Apply one coat and let dry fully. You can use fans to speed up the drying time. Apply a second coat and let dry. Apply one coat of Milestone Cementic Canuba Wax. Dilute the wax 1:1 with water prior to application. Apply with painting pad, using circular motion. Let dry for a bit, then rag in excess wax with clean cloth. Let dry completely, then repeat. After second coat has dried completely, use clean, dry rag to buff surface to a soft, organic sheen.

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Exterior Walls

Sand the final finish coat with #120 - #150 grit sand paper. Apply Miracle 511 (available at Home Depot) liberally with painting pad, using circular motion. Keep the surface saturated for several minutes, then rag excess liquid off the surface. Make sure to clean

the surface well since too much build-up of 511 may inhibit the proper adhesion of subsequent sealers. Let dry completely. This will take 6 to 12 hours, depending on weather conditions. Apply a total of 3 coats of 511, usually 2 in one day and one the next. After the last coat of 511 has dried completely, apply Milestone Cementic Urethane with painting pad. Use circular motions while applying. After it has had a chance to be absorbed by the surface, rag the remaining urethane in, using a clean cloth and circular motions. Start at the bottom of the wall and work your way up to avoid dripping onto the unsealed surface. If drips occur, wipe them up as soon as possible. Apply one coat and let dry fully. You can use fans to speed up the drying time. Apply a second coat and let dry. Apply one coat of Milestone Cementic Canuba Wax. Dilute the wax 1:1 with water prior to application. Apply with painting pad, using circular motion. Let dry for a bit, then rag in excess wax with clean cloth. Let dry completely, then repeat. After second coat has dried completely, use clean, dry rag to buff surface to a soft, organic sheen.

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Interior Floors

For interior floors we have 2 options:

Varathane Diamond Floor Finish can be found at Home Depot. It comes in different sheens, with Satin as the least reflective finish. It is a one-component, easy to install, inexpensive floor sealer.

Glitsa offers a high quality, water-based, commercial level floor sealer. This system consists of Glitsa Quality Seal and Glitsa Max. Quality Seal is the primer for Glitsa Max and you do need to use it to ensure proper adhesion of Glitsa Max. Glitsa Max is a two-component top coat that comes in different sheens, including an ultra-matte finish that has been very popular with our customers.

Which one should you use? Glitsa finishes are harder and come in a mat finish.

Varathane is less expensive and easier to install. We usually look at the requirements of the job and base our decision on that.

Varathane

Sand floor with #120 - #150 grit sand paper. Apply Milestone Cementic Urethane with painting pad. Use circular motions while applying. After it has had a chance to be absorbed by the surface, rag the remaining urethane in, using a clean cloth and circular motions. Let dry completely.

Warning: Do not skip the previous step – Varathane does strange things when applied directly over Milestone.

Clean floor with slightly damp rag to remove any dust prior to application of Varathane. Apply at least 2 coats of Varathane with painting pad, following the manufacturers instructions. If you sand in between coats make sure to repeat the damp rag procedure.

Glitsa

Sand floor with #120 - #150 grit sand paper. Apply Milestone Cementic Urethane with painting pad. Use circular motions while applying. After it has had a chance to be absorbed by the surface, rag the remaining urethane in, using a clean cloth and circular motions. Let dry completely.

Warning: Do not skip the previous step – Quality Seal can also do strange things when applied directly over Milestone.

Clean floor with slightly damp rag to remove any dust prior to application of Glitsa Quality Seal. Apply one thin coat of Glitsa Quality Seal, removing excess liquid by ragging it with a clean cloth. Let dry completely. Damp-rag floor again if necessary. Apply one flood coat of Quality Seal, following the manufacturers instructions. Let dry completely. Sand surface lightly, using maroon Scotch Brite or equivalent. This will knock loose any debris that settled out of the air during the drying process. Vacuum and damp-rag the floor one more time. Apply 2 coats of Glitsa Max, following the manufacturers instructions.

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Exterior Floors

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Counter Tops

The key ingredient for our counter top sealer combo is Kelly Moore's Envirapoxy, a two-component, water-based epoxy. It offers great protection against most substances encountered in the kitchen or bathroom environment. Nevertheless, it is important that any contamination is cleaned up as soon as possible. Our tests have shown that the risk of permanent staining increases drastically with prolonged exposure. Substances that did no damage after 1 and even 4 hours created permanent stains when left on the surface for 24 hours or more.

Sand counter with #120 - #150 grit sand paper. Remove dust. Apply Milestone Cementic Urethane with painting pad. Use circular motions while applying. After it has had a chance to be absorbed by the surface, rag the remaining urethane in, using a clean cloth and circular motions. Apply one coat and let dry fully. You can use fans to speed up the drying time. Apply a second coat and let dry. Mix Kelly Moore Envirapoxy. Mix 3 parts of the base with 1 part of the accelerator and 1 part water for deeper penetration and easier application. Apply small amount of mix to counter and spread using a Bond squeegee. Apply enough pressure to force the epoxy into the porosities of the counter surface. Rag excess material in, using a clean cloth. Do not work on more than 1-2 sf at a time since the epoxy dries fast and you run the risk of having drag lines from the squeegee becoming a permanent part of the sealer coat. Let dry completely. Apply 1 or 2 more coats in the same way. After the final coat is completely dry you can sand it with a maroon Scotch Brite or equivalent. This step allows you to control the final sheen. The epoxy has a clear gloss but by sanding it you can knock some of that sheen off for a less reflective finish. Next, apply one coat of Milestone Cementic Canuba Wax. Dilute the wax 1:1 with water prior to application. Apply with painting pad, using circular motion. Let dry for a bit, then rag in excess wax with clean cloth. Let dry completely, then repeat. After second coat has dried completely, use clean, dry rag to buff surface to a soft, organic sheen.

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Showers

The key ingredient for our shower sealer combo is Kelly Moore's Envirapoxy, a two-component, water-based epoxy. It offers great protection against most substances encountered in the bathroom environment. Nevertheless, it is important that any contamination is cleaned up as soon as possible. Our tests have shown that the risk of permanent staining increases drastically with prolonged exposure. Substances that did no damage after 1 and even 4 hours created permanent stains when left on the surface for 24 hours or more.

Sand surface with #120 - #150 grit sand paper. Remove dust. Apply Milestone Cementic Urethane with painting pad. Use circular motions while applying. After it has had a chance to be absorbed by the surface, rag the remaining urethane in, using a clean cloth and circular motions. Start at the bottom of the wall and work your way up to avoid dripping onto the unsealed surface. If drips occur, wipe them up as soon as possible. Apply one coat and let dry fully. You can use fans to speed up the drying time. Apply a second coat and let dry. Mix Kelly Moore Envirapoxy. Mix 3 parts of the base with 1 part of the accelerator and 1 part water for deeper penetration and easier application. Apply small amount of mix to counter and spread using a Bond squeegee. Apply enough pressure to force the epoxy into the porosities of the counter surface. Rag excess material in, using a clean cloth. Do not work on more than 1-2 sf at a time since the epoxy dries fast and you run the risk of having drag lines from the squeegee becoming a permanent part of the sealer coat. Let dry completely. Apply 1 or 2 more coats in the same way. After the final coat is completely dry you can sand it with a maroon Scotch Brite or equivalent. This step allows you to control the final sheen. The epoxy has a clear gloss but by sanding it you can knock some of that sheen off for a less reflective finish. Next, apply one coat of Milestone Cementic Canuba Wax. Dilute the wax 1:1 with water prior to application. Apply with painting pad, using circular motion. Let dry for a bit, then rag in excess wax with clean cloth. Let dry completely, then repeat.

After second coat has dried completely, use clean, dry rag to buff surface to a soft, organic sheen. Note: If the shower pan was done in Milestone, do not apply Milestone Cementic Canuba Wax to the the floor since it would become too slippery when wet.

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