

MIRACOTE® APPLICATION SPECIFICATION

NO: 12
Date: Reviewed 7/02
Page: 1 of 3

POOL DECK SURFACING

Purpose and Scope of this Specification: Instructions for the application of a durable, decorative pool deck surfacing which is cooler than concrete and comfortable underfoot.

Thickness: 3/32" (90 mils) (2,38 mm)

Approximate Quantity of Materials Required

To cover ONE HUNDRED SQ. FT. (9.3 SQ. METERS):
Amount Required

Liquid Catalyst, (5 Gallon Pail)	.42 Pail
Dry Mix – Regular, (55 Lb. Bag)	.80 Bag
Colorbond, (5 Gallon Pail)	.13 Pail

NOTE: Order Miracote Poly Fabric (10" width) to strip all cracks and construction joints (see "Crack Detail" below).

NOTE: Order an additional .17 five-gallon pails Miracote Liquid Catalyst and .20 bags Smooth Miracote Dry Mix for three coat systems using "grout coat".

NOTE: Order .03 five-gallon pails Miraseal for each coat clear sealer required.

EQUIPMENT REQUIRED

Heavy Duty ½ inch Drill and "Jiffy" Mixing Blade
Mixing Containers
Muriatic Acid (15% Solution)
Power Washer (2500 PSI)
Crack Router or Grinder with Masonry Cutting Blade
Caulking Guns and Polyurethane Sealant (Sika Flex 1-A or equal)
Rectangular Steel Trowels, Pool Plaster Trowel, Walking Trowel
Goldblatt Acoustic Texture Rig or "Hopper Gun" Mortex-type "Dash Brush" or Rice Brush
Brushes and Rollers (½" and ¾", Nap)
Spiked Shoes
Brooms, Air Blowers
Duct Tape and Masking Paper

SURFACING PREPARATION

Remove all loose decking material, paint, or other coatings. Remove all spalled concrete. In particular, be sure to remove all grease, oil, silicone coatings, or any other material on concrete that would prevent adhesion. Generally, concrete is to be etched with a 1:4 solution of Muriatic Acid and water to remove alkali deposits or loose particles on the surface. The acid must be thoroughly neutralized by pressure washing with water and detergent solution, however. TriSodium Phosphate or TSP is an inexpensive and effective detergent. Grinding, shotblasting or power scarifying or pressure washing is also acceptable methods. CAUTION: Remove acid residue in accordance with safe-handling practice and in compliance with general regulations.

UNDERLAYMENTS – Fill Major depressions or cavities in concrete or deck coating with Miracote Repair Mortar. The mix ratio for the Miracote Repair Mortar is:

Miracote Repair Mortar Liquid	1 gallon
Miracote Repair Mortar Powder	1 bag

Prime the concrete with Miracote Underlay Liquid before application. Pour the Miracote Underlay mix out and spread it evenly with a trowel. Use screeds when sloping the material. Coverage per mix is 30 sq. ft. at thickness of ¼". Allow the material to cure (8) hours per ¼" thickness before applying the Miracote coating.

SLOPING – Drainage is not a part of the standard Miracote specification. Drainage should be provided structurally or included herein by the application of Crossfield Products Corp. polymer modified Miracote Repair Mortar. Slope the Miracote Repair Mortar to fall 1/8" per Ln. Ft. minimum to provide for proper drainage.

EXPANSION JOINTS – Concrete decks should have a control joint system worked out to meet all known deck-stress concentration points. A good quality polyurethane sealant such as Sika 1-A or equal can be used to fill expansion joints, generally after application of the coating. Install backer rod in deep joints to prevent 3-sided adhesion of the sealant. Joint design should accommodate the movement expected. Generally, the depth of the joint should be no more than ½ the width. Priming of the side walls of the joint with Miracote or 500 "W" Epoxy Primer is highly recommended.

CRACK DETAIL – "Non-working" cracks between expansion joints less than 1/16" should be routed with masonry saw to form a ¼" X ¼" joint, primed with Miracote or 500 "W" Primer and filled with polyurethane sealant. 4" strips of Poly Fabric, polyester mesh, fiberglass or other alkaline reinforcing material should be embedded in the Miracote over these cracks to provide crack resistance.

METAL – Prime all ferrous metal with Miracote 500 "W" epoxy Primer.

MIXING MIRACOTE

Correct mixing of Miracote is absolutely essential to the proper functioning of the materials.

1. Open the Miracote Catalyst container and pour off about half of the liquid into another clean five-gallon pail. Then, with a flat stick, stir the bottom of the original container to bring up any solid residue that may have settled on the bottom of the Catalyst pail. Then "box" the Catalyst back and forth a couple of times with the other part of the pail.
2. To make a full "unit" of Miracote, pour five gallons of stirred and boxed liquid Catalyst into a large mixing container. Start mixing with an electric drill mounting a "Jiffy" impeller-type mixing blade, or equal. Then gradually add about two bags of Miracote Dry Mix powder into the mixing container.

NOTE: See **Application Steps** below for exact mix ratios for each coat.

3. Continue to mix the two materials together as the Dry Mix powder is slowly poured into the Catalyst—never reverse the procedure and attempt to pour the liquid into the powder.
4. After the material has been mixed free of any obvious lumps, continue to mix for at least two more minutes with the "Jiffy" blade submerged in the mix and held at an angle. You will observe that the Miracote mix gradually loses its "grainy" look and develops a "creamy" appearance. This two minutes of final mixing is essential to eliminate dry pockets of unmixed material that could produce pinholes and white efflorescing in the finished work.
5. Apply Miracote immediately upon completion of mixing. Working time of material at 70°F. (21°C - 24°C) is about 30 minutes. Mix no more material than can be applied in that time. Discard any material that starts to set up in the mixing container. Do not attempt to re-temper material. Keep material stirred to avoid aggregate settling in container during use. *

STEP ONE – MIRACOTE BONDCOAT

The Miracote bondcoat is applied to prime and condition the surface.

- A. Slightly dampen any concrete and masonry surfaces with water before applying the Miracote Bondcoat. Recommended method for dampening is with a water hose spray nozzle or a hand held pumped garden sprayer. Do not dampen to a point where surfaces are shiny wet—only damp. Non-porous surfaces such as metal, tile, etc. do not require dampening.

- B. For a Miracote bondcoat application mix together the following:

Liquid Catalyst	5-gallons
Dry Mix (Regular)	1 ¼ bags

Blend these materials together thoroughly by "Jiffy"-mixer drill mixing. Apply the Miracote immediately upon completion of mixing. Keep material stirred to avoid aggregate settling in container during use.

- C. Trowel or Squeegee the bondcoat over the concrete for best results. Be sure to work the material into porous concrete surfaces. To produce a smoother, flatter surface on concrete that has surface irregularities, pits, and voids, trowelling is recommended. On large areas, it is recommended to squeegee the Miracote for fastest production. Use an inexpensive brush to apply Miracote in corners and cove the material up at walls. The above mix of Miracote should cover about 500 Sq. Ft. cure time for the bondcoat is (2-4) hours or until no material comes up when you press your foot down on the deck and swivel it under weight.
- D. An additional coat of Miracote may be required to "grout" or smooth out the surface for certain texture finishes. For a Miracote "grout coat" application mix together the following.

Liquid Catalyst	5 gallons
Dry Mix – Smooth	1 ¼ bags

"Scrape-trowel" the Miracote to fill all voids or pinholes in reinforcing fabric and to smooth or level-up surface as required. A flexible tool such as a plastic "Bondo Spreader" is very effective for smoothing out material at wall coves. The above mix of Miracote should cover about 600 Sq. Ft.

STEP TWO – MIRACOTE TEXTURE COAT

The Miracote texture coat is designed to provide a uniform, slip-resistant, decorative finish where desired. A variety of functional or decorative Miracote Texture Finishes may be applied. The most common textures applied around pool decks are as follows:

Knockdown Finish- To produce a contemporary, decorative Monterey or Travertine finish. The mix ration for a knockdown finish is:

Liquid Catalyst	5-gallons
Dry Mix – Regular	2 ¼ bags

When using this finishing technique, it is important to keep the viscosity of the material consistent from one batch to the next. The ideal material viscosity or consistency for a knockdown finish is similar to thick "pancake batter". An easy way to judge material viscosity is to run your finger across the surface of the material in the mixing pail; the material should be stiff enough to leave a "rut" behind your finger. This rut should "close in" behind your finger at the same rate on each mix. Adjust the orifice on the "Pattern Pistol" to the desired size. Generally, the largest or second to the largest orifice or "hole setting" is used and the material is sprayed to a 70% - 75% coverage at 10-15 p.s.i. air pressure. Spray the material in even, overlapping passes, and hold the trigger on the gun "open" as much as possible to avoid drips and "stop and start" patterns. The same applicator should do all the spraying to achieve the most uniform spray pattern.

Then, walk through the wet material on spiked shoes (golf shoes work well) and lightly "knock-down" the material with the trowel. The material should be allowed to set until it loses its wet-glaze. Miracote will generally set to a trowel-able hardness in about ten minutes, depending on temperature and humidity. Care must be taken to knockdown each batch of material at the same stage of set or hardness to maintain uniform size "paddies" or flat troweled texture splatters.

Knockdown the materials in as few passes as possible do not over work the material. To achieve the most professional looking finish, it is recommended that all the material be knocked-down in the same way, and in the same direction, by the same applicator.

A foolproof way to apply a professional looking knock-down finish is to spray a texture coat to a 90% coverage, and allow it to cure without knocking it down. Coverage is approximately 500 Sq. Ft. per mix.

Then splatter a second texture coat and knock it down. The texture created by the first coat will "catch" the texture from the second coat as it is being troweled and keep it from "smearing". Coverage is approximately 450 Sq. Ft. per mix.

Dash Finish – To produce a "Kool-Deck" finish. The finished surface should expose a 40% flat – 60% void surface. This "Flat Void Pattern" is achieved, beginning with a very light troweling (which produces a hard, dense surface). The mix ratio for a Kool-Deck finish is:

Liquid Catalyst	5 gallons
Dry Mix – Regular	2 ¼ bags

When using this finishing technique, "Dash" or shake the material off a Mortex-type "Dash Brush" or Rice Brush in even strokes to a 90% coverage. This tool can usually be found in swimming pool supply stores or concrete accessory stores. Allow the material to set-up for 10-15 minutes or until it loses its wet-glaze. Then, walk through the material on spiked shoes and lightly flatten the peaks of the texture with a trowel. Troweling may be done with a hand trowel or walking trowel. To set the pattern by hand, use a pool plaster trowel (well broken in). The trowel should be held flat, using a very light hand. The walking trowel consists of a wide, flexible blade that attaches to extension handles. To set the pattern, suspend the trowel over the work and lower it until a slight amount of pressure is exerted. Always use a pulling motion. The flexible blade will follow the contour of the slab, producing a very light "Flat-Void Pattern". The walking trowel is especially useful for its speed and long reach on large areas. Closely follow behind this operation with a second pass of the walking trowel.

To finish out the texture, correct any uneven pattern by holding the hand trowel flat to attain the desired 40%-60% "Flat-Void Pattern". A final, sharp troweling pass may be necessary after the material has set to clean away any "fuzz-marks", fins ridges or "trowel licks" left from flat troweling. If necessary, the texture may be lightly sanded with a floor sander, once it has cured (4-6) hours, to obtain a more uniform finish. Coverage is approximately 450 Sq. Ft. per mix.

Drop Finish- To produce a "rounded-drop" or "drip" finish. The mix ratio for a rounded-drop or drip finish is:

Liquid Catalyst	5-gallons
Dry Mix-Smooth	1 ¼ bags

Use a Mortex-type Dash Brush or Rice Brush for this finishing technique. Dip the dash brush into the material and "drip" the material off the brush by "shaking" the brush with quick back and forth wrist actions while holding the brush at chest height. Keep the dash brush moving and always try to keep it "shaking" for best results. This will help to control unwanted lines or streaks of material from disfiguring the texture. Pull the brush out of the bucket from different directions to avoid puddling the material around the bucket. Avoid texturing over previously textured areas that have cured to prevent overlap from doubling the texture.

Each brush full of material should cover about 2-3 sq. ft., depending on the coverage and surface profile desired. The Rounded Drop or "Drip" finish is achieved by applying the texture over 50%-60% of the surface. "Dash" excess material off the brush periodically. It is a good idea to periodically flush the dash brush with water and wire-brush it to clean dried material off the bristles. This will help to ensure that the flow of material off the brush is uniform.

The Miracote will gradually "stiffen" in the bucket as it begins to set. The stiffer the material becomes, the slower it will flow off the brush and the less it will self-level on the surface. Never mix more material than can be applied in about (30) minutes. Coverage is approximately 500 Sq. Ft. per mix.

The Dash Brush method requires a certain amount of artistic skill on the part of the applicator. Patience and an ability to apply the texture "symmetrically" are essential to achieving a professional looking finish. No two mechanics will produce exactly the same texture. It is recommended that the same mechanic do all the texturing for best results.

Allow all Miracote texture to cure (12) hours before sealing.
Consult the Miracote texture Guide For other texture applications.

STEP THREE - SEALING OPTIONAL - RESIDENTIAL/NON-COMMERCIAL ONLY

Miracote Colorbond may be applied over Miracote Protective Coating to provide better wash down characteristics and an aesthetically pleasing, solid-color finish.

- A. Pre-mix the Colorbond before each use using a "Jiffy" mixer.
- B. Always apply Colorbond in (2) thin coats. Apply with a ½"-3/4" nap lambs wool or short-nap non-shedding mohair roller. Do not leave "puddles" of material and avoid "holidays" (missed spots). Apply the Colorbond with a brush at corners and base, always maintaining a "wet-edge" between the brush and roller to avoid "lap marks". Colorbond may also be applied by Airless Spray using a .017- .019 orifice tip. Apply second coat at cross-angles with first. Clean equipment with water.
The major job caution to be observed with Colorbond application, just as with any exterior coating material, is its application on surfaces that are too hot. Application of Colorbond should not be made over any surface that has a temperature of more than 130° F.

Sometimes, under certain atmospheric conditions, i.e. high wind, the surface will be unsuitable to apply Colorbond even if the temperature is lower than 100°F. All application personnel should be alerted to watch for signs of "too-fast dry out". The warning signals for this are:

1. There will be no "wet-edge" to blend into on successive roller passes.
2. The roller gets "gummy" more quickly than usual.
3. Sometimes a stem vapor can be seen coming off the surface as the Colorbond is rolled on.
4. Spread per gallon is reduced.
5. Lap marks or pinholes become evident.

When any or all of the above situations occur, the installer should stop work on that section.

It is always better to schedule work so as to avoid applying Colorbond in the direct rays of the sun on a very hot day. Often-time work can be planned so as to take advantage of the shade afforded by penthouse structures. On very hot days work can be started on the west side of a penthouse building in the morning and finished by working on the eastern side in the afternoon. In

hot weather, Colorbond should be applied either in early morning or late afternoon so as to avoid applying in the direct rays of the hot sun. Allow Colorbond to cure (6) hours min. before allowing traffic.

STEP FOUR - FINISHING

Miracote or Colorbond can also be sealed with Miraseal to provide a more clean-able, chemical-resistant finish where desired. Miraseal (a high quality water-base acrylic sealer) will also greatly improve the clean-ability of Miracote. Miraseal is generally used over Colorbond to improve stain-resistance.

- A. Pre-mix the Miraseal before each use using a "Jiffy" mixer.
- B. Apply Miraseal in very thin coats with a ½" lambs wool or short nap non-shedding mohair roller. Generally, Miraseal is applied in two coatings using a hand sponge, a rag or a lamb's wool applicator. One gallon of Miraseal will cover about 600 Sq. Ft. per gallon, per coat. Always maintain a wet-edge between the brush and roller to avoid "lap marks". Never apply Miraseal over surfaces which are too hot (over 120°F.), as the materials will dry out too quickly. **Always avoid** leaving "puddles" of material and "holidays" (missed spots). Do not apply Miraseal too thickly, as the material may "blush" (turn white) when subjected to moisture vapor transmission from the substrate. It is also necessary to apply these clear materials very carefully to avoid "holidays". Missed spots will be very noticeable, as the surface will not have a uniform gloss finish. Allow Miraseal to cure (4) hours minimum before allowing traffic.

CAUTIONS

1. Miracote will stick to almost everything and is much easier to clean off when it is still wet. Otherwise, sanding, grinding or chipping may be required to remove unwanted Miracote.
2. Keep a bucket of water near your work area to keep tools clean.
3. A sponge comes in handy when texturing Miracote.
4. Never mix water with Miracote when thinning is required- use Miracote Catalyst only.
5. If Miracote has started to set-up, do not attempt to re-mix.
6. Pull masking and tape off as soon as possible for easiest removal. Use duct tape or filament tape for best results.
7. When applying Miracote in full sun on a hot day or in high winds expect greatly reduced working time.
8. Do not let Miracote Catalyst freeze.
9. Do not apply at temperatures below 40° F. or when such temperatures may be expected during its drying and curing time.
10. Miracote is never to be applied over joints, moving or working cracks, cracks greater than 1/16", or any untreated or unprepared surfaces.