

MIRACOTE® APPLICATION SPECIFICATION

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PARKING DECK

Purpose and Scope of this Specification: Instructions for the application of a durable, waterproof, cementitious Miracote Parking Deck Coating System over previously prepared concrete surfaces.

Thickness: 1/8" (2,17 mm)

Approximate Quantity of Materials Required

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

Liquid Catalyst,	5 gal. pail	.57 pail
Dry Mix,	55 lb. bag	1.00 bag
Membrane "A",	5 gal. pail	.62 pail

NOTE: Add materials for crack repairs. Add materials for substrate repairs.

NOTE: For fabric reinforced basecoat, add .08 pails Miracote Liquid Catalyst, .03 bags Regular Miracote Dry Mix Powder and .09 rolls 48" width Poly Fabric (1,000 sq. ft. roll).

NOTE: Add .03 five-gallon pails Miraseal for each coat of clear acrylic finish desired. Optional Mirathane "AL" Topcoats for best resistance to tire marks.

NOTE: For each coat of clear or pigmented chemical resistant urethane finish desired, add .08 five gallon pails Mirathane AL Topcoat.

Equipment Required:

Brooms, Air Blowers
Muriatic Acid (15% Solution)
Power Washer (2500 PSI)
Crack Router or Grinder
Moisture Meter
Caulking Guns
Polyurethane Sealant (Sika Flex 1-A or equal)
5 and 10 gallon Mixing Containers
Jiffy Mixer mounted on " Drill
Steel Trowels
Regular and Notched Rubber Squeegees
(3/16" deep on 3/16" centers)
Spiked Shoes
Porcupine Roller
Asphalt Coater Broom
Goldblatt Acoustic Texture Rig or "Hopper Gun" Brushes.

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Rollers (9" or 18" ½" Nap)
Roller Extension Poles
Duct Tape

Surface Preparation

Remove any material on the concrete, which would prevent Miracote from absorbing into the concrete to form a permanent, penetrating bond. Remove all existing paint, coatings, dirt or spilled concrete. Any grease, oil, curing compound, surface hardener, foreign matter or laitance must be removed by acid washing (15% solution), shot blasting or sand blasting.

Underlayments – Fill all major holes, depressions or cavities in the concrete with Miracote Repair Mortar

Metal – Prime all metal with 500 "W" Primer. Rust should be mechanically removed where present.

Deck to Wall, Drain and Penetration Details – Prime with 500 "W" Primer and apply a ¼" x ¼" minimum polyurethane sealant "cant" at all deck to wall or deck to penetration junctures. Caulk around all drain flanges where metal meets concrete. Ensure that all drains or penetrations are rigid; use Kwik-Flo epoxy mortar to grout solid before detailing.

Crack and Expansion Joint Details - Cracks over 1/16" should be routed to form a ¼" x ¼" joint, primed with 500 "W" Primer and filled with one part polyurethane sealant (Sika Flex 1-A or equal). Expansion joints should be filled with polyurethane sealant over backer rod.

After curing (overnight), a 20 mil "stripe-coat" of Mirathane AR polyurethane resin should be applied 3" on either side of all cracks and joints. Saw cut control joints, over all "Double-T" or "Span-Crete" joints, and detail as above (See Crossfield for specific recommendations).

- Pour the complete Component B of 500 "W" Primer (curing agent) into the component A of 500 "W" Primer and blend thoroughly for two (2) minutes. Working time is approximately (2) hours. Roller-apply the mixture to the prepared surface at a rate of 250-sq. ft. per gallon. Use material within 2 hours, allow to cure 2 to 4 hours or until tacky (enough to walk on).
- Mix one pint Accelerator with each (5) gallon unit of Mirathane AR Resin material. Mix thoroughly with a Jiffy mixer and let mixture stand (5) five minutes. Once again mix thoroughly before applying to the surface.
- Apply the Mirathane AR Resin as soon as the 500 "W" Primer is dry enough to walk on (within 4 hours). Spread the material with a notched rubber squeegee and back roll with a porcupine roller to level out material. Stripe-coat all cracks and joints. Coverage is 120 lineal feet per gallon in a 6" stripe. Periodically check the wet mil thickness of the coating by use of a mil gauge and adjust as required to comply with system specifications. Let cure overnight.
NOTE: High humidity and warm air temperatures speed up the curing process, low humidity and cold air temperatures retard the curing process.

Mixing Instructions

- Pre-mix the Miracote Liquid Catalyst before each use using a "Jiffy" mixer.
- Pour the contents of a five-gallon pail of Miracote Liquid Catalyst into a large clean plastic-mixing container. Gradually add the Miracote Dry Mix Powder to the Miracote Liquid Catalyst. Apply the Miracote immediately upon completion of mixing. Pot life of material at 70 – 75° F. is about 30 minutes. Mix no more material than can be applied at that time. Discard any material which starts to set up in the mixing container, do not attempt to re-temper material. Keep material stirred during use to avoid aggregate settling in container.

STEP ONE – MIRACOTE BONDCOAT

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

- Slightly dampen any concrete or masonry surface with water before application. Recommended method for dampening is with a water hose spray nozzle or a hand held pump garden sprayer. Do not dampen to a point where surfaces are shiny wet, only dampen. Non-porous surfaces such as metal, tile, etc. do not require dampening.
- The mix ratio for the Bondcoat is:

(5) Gal. Miracote Liquid Catalyst per
(1 1/3) Bags Regular Miracote Dry Mix Powder
- Pour ribbons of Miracote Bondcoat material on the deck and spread by squeegee, asphalt-coater broom or trowel. Use an

inexpensive brush to apply the material in corners and cove the material up the walls. Coverage is approximately (2-4) hours.

NOTE: Low humidity and warm air temperatures speed up the curing process, high humidity and cold air temperatures retard the curing process.

NOTE: "Cove" or turn up Miracote and all subsequent coats of this system 2"-4" onto all adjacent curbs, walls, penetrations or other vertical surfaces to create a "bathtub effect".

STEP TWO – MIRACOTE MEMBRANE "A"

Miracote Membrane "A" is applied to provide positive waterproofing for the system. Surfaces should be visibly dry and pass a 4-hour rubber mats test (no condensation) prior to application of the membrane.

- A) Pre-mix the Miracote Membrane "A" before use using a "Jiffy" mixer. Avoid mixing air into the material.
- B) Pour ribbons of Miracote Membrane "A" and apply by squeegee and back roll, trowel or brush. Cove the material 2"-4" up at walls. Rolling is not recommended in high temperatures as the action of the roller may entrain air in fast curing material, leaving pinholes. Coverage is approximately (32) sq. ft. per gallon in one coat or (64) sq. ft. per gallon in two coats for a 30-mil dry film thickness. Cure time for the membrane is approximately (4-6) hours per 15-mil coat at 77 ° F. at 50% relative humidity.

NOTE: Low humidity and warm air temperatures speed up the curing process, high humidity and cold air temperatures retard the curing process.

STEP THREE – MIRACOTE BASECOAT

A basecoat of Miracote is applied to protect the waterproof membrane of the system.

- A) The mix ratio for the Basecoat is:
 - (5) Gal. Miracote Liquid Catalyst per
 - (2) Bags Regular Miracote Dry Mix Powder
- B) Pour ribbons of Miracote Basecoat material on the deck and spread by squeegee, asphalt-coater broom or trowel. Use an inexpensive brush to apply the material in corners and cove the material up at walls. Coverage is approximately 500 sq. ft. per mix. Cure time for the basecoat is approximately (4-6) hours.

STEP THREE (OPTIONAL) – FABRIC REINFORCED MIRACOTE BASECOAT

Miracote protective coating "embedded" with Poly Fabric is applied to protect the waterproof membrane and provide crack resistance in the cementitious topping of the system.

- A) The mix ratio for the polypropylene fabric reinforced Basecoat is:
 - (5) Gal. Miracote Liquid Catalyst per
 - (2) Bags Regular Miracote Dry Mix Powder
- B) Pour ribbons of Miracote material on the deck and spread by trowel or squeegee to a width slightly wider than the 48-inch rolls of Poly Fabric. "Unroll" the fabric into the wet material to embed it. Work the material up through the weave or the fabric with a trowel. "Butt" the Poly Fabric at all seams, do not overlap. Be sure to pull out all wrinkles.
- C) Apply the Miracote and Poly Fabric over cracks, joints and at deck to wall coves using a trowel or brush to embed the Material.
- D) After cure, an additional application of Miracote, or grout coat, may be applied to smooth out and level up the surface.

The mix ratio for the grout coat is:

- (5) Gal. Miracote Liquid Catalyst per
- (1 ½) bags Smooth Miracote Dry Mix Powder;
- (1 ¼ for Fine)

"Scrape-trowel" the material to fill fabric pinholes or level-up seams as necessary. A flexible tool such as a plastic "Bondo Spreader" is ideal for smoothing out material at wall coves. Coverage is approximately 600-sq. ft. per mix

STEP FOUR – MIRACOTE TEXTURE COAT

Miracote may be applied in a variety of textures to provide a uniform, slip-resistant or decorative finish where desired. Generally, a spray or back roll finish is applied on parking deck surfaces to provide a skid-resistant finish.

Spray Texture Finish: When using this finishing technique, use a Goldblatt Acoustic Spray ("Hopper Gun") or a Chemgrout pump for faster production.

The mix ratio for a Spray finish is:

- (5) Gal. Miracote Liquid Catalyst per
- (2) Bags Regular Miracote Dry Mix Powder

Spray the material in even, overlapping passes to a 90% coverage. Hold the trigger on the gun "open" as much as possible to avoid drips and "stop and start" patterns. Adjust the hole setting on the "pattern Pistol" to spray the desired size of material. Generally, the second to the largest hole setting on a hopper gun or a ¼" orifice is used and the material is sprayed at 10-30 p.s.i. air pressure. Coverage is approximately 600-sq. ft. per mix. Allow the texture to cure (12) hours before sealing.

Back Roll Finish: When using this finishing technique spread the material evenly with a roller or squeegee and lightly back roll the materials to produce a non-skid finish. The mix ratio for a Back Roll Finish is:

- (5) Gal. Miracote Liquid Catalyst per
- (2) Bags Regular Miracote Dry Mix Powder

Always maintain a "wet edge" to avoid "lap marks". Always roll the material in one direction for best results. A second back roll coat may be applied at cross-directions to the first to produce a more even finish. Coverage is approximately 500-sq. ft. per mix. Allow the texture to cure (12) hours before sealing.

STEP FIVE – SEALING AND FINISHING (OPTIONAL)

Miracote Miraseal and Mirathane AL Topcoat (Clear or Pigmented) may be applied wherever a more cleanable or chemical resistant finish is desired.

- A) Apply Miraseal in one or two thin coats with a ½" – ¾" inch lambs wool or short nap mohair roller. Apply by brush at corners and base, etc. Always maintain a wet edge between the roller and brush to avoid "lap marks". Never apply Miraseal over surfaces, which are too hot (over 120° F.), as the material will "flash – set" and not flow properly. Do not leave "puddles" of material. Avoid "holidays" (missed spots). Do not apply Miraseal too thickly; as the material may "blush" (turn white).

Coverage for Miraseal is approximately 600-sq. ft. per gallon, per coat depending on surface profile. Allow Miraseal to cure (4) hours minimum before allowing traffic.

- B) Apply Mirathane AL Topcoat in one or two thin coats with a ½" – ¾" lambs wool or short nap mohair roller or by squeegee and back roll. Apply by brush at corners and base, etc. Follow the same cautions above for Miraseal.

STEP FIVE – SEALING AND FINISHING (OPTIONAL)

Coverage for Mirathane AL Topcoat is approximately 250-sq. ft. per gallon, per coat depending on surface profile. Allow the Mirathane AL Topcoat to cure (12) hour's minimum before allowing traffic.

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Cautions

1. Proceed with work only when existing and forecasted weather conditions will permit work to be performed. Do not apply if raining or if rain appears to be imminent. Do not apply system below 50° F.
2. It is common for moisture vapor to “gas” out of concrete and cause “pinholes” in the primer or bondcoat as it sets up, especially if the air temperature is increasing. **Pinholes can lead to leaks.** To avoid pinholes (especially in the Mirathane AR Resin and Miracote Membrane “A”), apply the materials when the temperature is at the Dew Point (or decreasing) generally mid to late afternoon. Moisture vapor pressure is reversed as the temperature starts decreasing, and the materials will tend to be drawn down into the concrete – forming a much stronger, more monolithic bond with substrate.
3. Provide adequate ventilation when using Mirathane AR Resin materials. If adequate ventilation is not available, provide all personnel entering the area with full-face respirator. Post signs to keep away from sparks, flames and other similar materials. Do not allow smoking in area.
4. To prevent contact with materials protective clothing, chemical resistant gloves, and safety goggles.
5. Consult application specification, Material Safety Data Sheets and labels before using any products.
6. Protect all areas, which are not to be coated by masking tape, plastic or drop cloth. Mask off adjoining areas not to receive fluid applied membrane. Effectively prevent spillage or over spray of materials outside membrane areas.

GENERAL CAUTIONS:

1. Read and follow Crossfield Products Corp. Specification S-900HESP.
2. For proper workability it is important that the Miracote materials be stored and mixed at a temperature of 65°F - 80°F (18°C -- 26°C).

3. The substrate temperature should be between 65°F - 80°F. A warm substrate decreases the pot life and can cause mixes to be sticky. A cooler substrate will retard the cure and may cause a blush in some epoxy resins.
4. All concrete curing agents, sealers and hardeners must be removed from the concrete prior to application of the Bondcoat. Preparation using bead blasting is recommended.
5. When mixing two component polymer resin materials, be sure to use all of the provided resins. The resins are pre-measured to the correct ratios. Scrape all of the hardener from the container into the resin.
6. Do not turn mixing vessels upside down to drain on the flooring surface. Unmixed resin from the side may produce soft or uncured spots on the flooring surface.
7. Keep the unfinished flooring surface clean.
8. Do not track dirt, grease, or any other contaminate onto the unfinished flooring surface. Any contaminate could effect the aesthetics of the finished flooring.
9. Good ventilation must be provided during application, particularly in confined spaces when using two component polymer resins in the Urethane or Epoxy classes
10. Always obtain, read and observe Manufacturer's Safety Data Sheets (MSDS) before handling materials. Become familiar with the products on paper before you open the cans.
11. Always obtain and read the application specification prior to doing work.
12. Obtain and read the Product Information Sheet for this product. LIMITED WARRANTY information is contained in the Product Information Sheet.
13. This application is not designed to bridge cracks, working joints, dynamic cracks, or expansion joints.
14. Consult Crossfield Products prior to application.