



PERMASHIELD PREMIUM



MONOPOLE INC.
Manufacturer of

U.S. SPECIALTY COATINGS

PERMASHIELD PREMIUM is the most advanced environmentally friendly formulation for Permanent Graffiti Control, utilizing an easy to use graffiti removal system.

PERMASHIELD PREMIUM is intended for use on unpainted or painted concrete, masonry, stucco, prepared metal, EIFS, murals, signs and other surfaces. It created a clear protective, UV resistant coating where graffiti tagging can be removed without affecting the appearance of the substrate.

ADVANTAGES:

- Very Low VOC and Low Odor
- CA Section 01350 Compliant - Earn LEED IAQ Credits
- Lifetime and 20 Year Warranty for Unlimited Graffiti Removals
- State and City Approvals
- UV, Stain, Chemical and Hot Tire Resistant
- Available in a Clear or Pigmented
- Available in Matte and High Gloss
- Non-Yellowing, Non Chalking, Breathable

SYSTEM COMPOSITION:

A. UNPAINTED (NATURAL) SURFACES:

1. **AQUASEAL ME12** (1 Flood Coat)
2. **PERMASHIELD BASE COAT** (2 Coats)
3. **PERMASHIELD PREMIUM** (2-3 Coats)

B. PAINTED SURFACES:

1. Depending on the surface, apply one to two coats of **PERMASHIELD BASE** to create a pinhole free surface for the **PERMASHIELD PREMIUM**.
2. **PERMASHIELD PREMIUM** (2-3 Coats)
3. If the surface is only painted for part of the elevation, make sure to apply one coat of **AQUASEAL ME12** to seal the unpainted surface area.

Read the entire Technical Data Sheet and SDS before application.

SURFACE PREPARATION:

- A. Substrates to receive material must be clean and free from all dirt, rust, scale, bond-breakers, grease, moisture, efflorescence, lime, and other foreign substances which are detrimental to the adhesion and required appearance of the **PERMASHIELD PREMIUM SYSTEM**.
- B. Concrete, stucco, plaster and masonry must be cured at least 28 days. Level protrusions, and repair cavities, voids, holes, cracks, etc. that are larger than 1/16". If adhesion is an issue, sandblast, abrasive blast or acid etch dense, non-porous concrete.
- C. Freestanding walls require a treatment of **AQUASEAL ME12** on the unpainted/unsealed backside and sides. Horizontal puddle prone wall caps need to be sealed with a film forming, premium elastomeric coating, such as **MONOCHEM ULTRA-LASTIC**, to protect against water penetrating. A metal cap is another option. Sloped caps require an application of **AQUASEAL ME12**

All below grade wall areas should be protected with a below grade waterproofing membrane such as **BLACK EMULSION** or **MONOCHEM 300**.

- D. Non Ferrous (glazed, aluminum, stainless steel, copper): Remove the zinc and oily film with a neutral detergent or emulsion cleaner. Acid etching or blasting lightly with fine abrasives are also options. Then apply coatings within 3 hours to avoid oxidation.

PHYSICAL PROPERTIES

Composition: 2-Part Aliphatic Polyurethane

VOC, ASTM D3960: < 5 g/L

Solids by Weight: 58% ±2

Solids by Volume: 50-54%

Weight: 96 Oz Kit: 9 Lbs; 3-Gal Kit: 28 Lbs

Finish @60°: Gloss-85-90°; Matte-5-10°

Weight per Gallon: 10 Lbs

Mixed Viscosity @75°F: 85-90 Kus

Spread Rate: 200-250 Sq. Ft per Gallon

Recommended Dry Mills: 3 - 4; Wet Mills: 5 - 7

Shelf Life: Gloss: 1.5 Year; Matte: 1 Year

Drying Schedule @3 Wet Mills (75 microns):

	@50°F	@77°F	@100°F
To Touch:	8 hours	4-6 hours	2 hours
To Recoat:	12 hours	6-8 hours	4 hours
To Cure:	14 days	7 days	5 days

If maximum time allowed between coats is exceeded (16-18 hours), abrade the surface prior to recoating or topcoating. Drying time is affected by temperature, humidity and film thickness.

Pot Life: Gloss: 1 Hour; Matte: 2 Hours

PERFORMANCE CHARACTERISTICS

Tensile Strength

Method: ASTM D412 · Result: 5950 PSI

Pencil Hardness

Method: ASTM D3363 · Result: 2H

Elongation

Method: ASTM D412 · Result: 150%

Modulus @100% Elongation: 4190 PSI

Impact Resistance

Method: ASTM D2794 Reverse · Result: 160 In/Lbs

Taber Abrasion Resistance

Method: ASTM D4060 · Result: < 45 mg loss/1000 cycle

Moisture Vapor Transmission

Method: ASTM 1653-13 · Result: 5.99% perms

Chemical Resistance

Method: ASTM D1308 - See Table 2

Graffiti Resistance

Method: ASTM D6578 - See Table 3

Accelerated Weathering

Method: ASTM G154

Result: No blistering, chalking, gloss or color change

Cyclic Weathering

Method: AASHTO R-31

Result: No blistering, cracking, checking, softening or delamination. Maximum change of 10 gloss level

- E. **Ferrous Metals (metal, steel, iron):** Remove all loose rust, dirt, grease or other contaminants by one of the following depending on the degree of cleanliness required. Blast SSPC-SP3; SSPC-SP2; SSPC-SP6; SSPC-SP7. Blast lightly with fine abrasives or conduct a light etching. Then rinse with Zinc. A rust inhibitive primer, like **MONOBOND RI**, is then required (within 3 hours) to go directly to the metal or steel.

COMPOSITION AND MATERIALS:

(For complete instructions refer to each product's Technical Data)

SEALER COAT: AQUASEAL ME12

AQUASEAL ME12: is a clear flat, water base, penetrating Silane/Siloxane water repellent. It must be applied to the entire exterior elevation (unless the surface is painted and sealed for the full elevation) to maintain the integrity of the natural (unpainted) surfaces and to protect the **PERMASHIELD PREMIUM** application. **AQUASEAL ME12** protects against water seepage and allows for a more consistent application of the Graffiti Control System.

- A. **AQUASEAL ME12** should be applied in a uniform manner. Each application coat consists of a light fog spray coat that wets the entire surface and breaks the surface tension. The fog spray coat must be followed immediately with a flood coat to achieve maximum penetration. Allow the material to run down 10 to 12 inches. Back rolling the run downs isn't required but will maximize the seal. A low pressure spray gun with a tip size of 0.035 inch is recommended. Allow 24 hours of dry time prior to applying **PERMASHIELD BASE**.
- B. The estimated coverage rate is approximately 50-90 square feet per gallon over porous concrete including mammoth block, standard block, split face block, old masonry brick, etc. Refer to the **AQUASEAL ME12** Technical Data Sheet for additional spread rates and information.
- C. Coverage rates may vary considerably due to the porosity of the substrate. Always test and obtain approval from the project architect and/or building owner prior to starting the job.

NOTE: For chalky concrete, stucco, plaster, and tilt-ups, substitute **AQUASEAL ME12** with **AQUABOND**. **AQUABOND** positive waterproofing cohesively binds chalky surfaces and is available in a clear finish. For detailed information and application instructions, please refer to the technical data pages.

BASE COAT: PERMASHIELD BASE

PERMASHIELD BASE is a single component, water based acrylic-urethane designed to provide a pin-hole free surface for the **PERMASHIELD PREMIUM**. It can be applied to porous substrates such as split-face block, mammoth block, CMU, stucco, masonry and other permeable substrates.

PERMASHIELD BASE is available in both clear base and white base and can be tinted to any color.

Item No. 6100: Clear Base Item No. 6150: White Base

- A. For unpainted surfaces, apply two coats of **PERMASHIELD BASE** to create a pinhole free surface. Do not proceed to the

PERMASHIELD PREMIUM topcoat if there are pinholes present after applying the **PERMASHIELD BASE**.

- B. For sound previously painted surfaces, apply one or two coats of **PERMASHIELD BASE** to maintain the natural look of the surface.
- C. **PERMASHIELD BASE** can be applied using a good quality roller, brush or airless sprayer with a tip size of .013-.017 inch. The estimated coverage rate is approximately 200 - 250 square feet per gallon, resulting in 2-3 dry mils thickness per coat (4-6 dry mils for 2 coats).
- D. Allow 1-3 hours dry time prior to applying the second coat. Apply the second coat after the milky-ness of the first coat clears. Allow 24 hours dry time before applying **PERMASHIELD PREMIUM** top coat.
- E. Do not proceed to the **PERMASHIELD PREMIUM** topcoat until the surface is pinhole free.

TOP COAT: PERMASHIELD PREMIUM

PERMASHIELD PREMIUM is a clear 2-component, water base, aliphatic polyurethane top coat available in clear matte or clear gloss. **PERMASHIELD PREMIUM** must be applied to a pin-hole free surface.

MIXING INSTRUCTIONS:

- A. **PERMASHIELD PREMIUM** clear gloss or matte finish is a water based, 2-component aliphatic polyurethane top coat.
- B. Stir Part A only before blending. Do not stir Part B.
- C. Add Part B to Part A (already stirred); use an electric mixer to blend the two parts. Scrape all the Part B out of the can. Mix for 2 to 3 minutes. No partial mixing.
- D. The pot life of the mixture is 1 to 2 hours, depending on temperature.
- E. Discard the unused mixture after 2 hours.
- F. Do not blend new mixture with the old.

APPLICATION PRECAUTIONS:

- **CAUTION!** Do not apply thicker than 6 wet mils thickness to avoid micro blistering.
- In all applications, we require doing a test section to determine the compatibility, adhesion, spread rates and appearance. All surfaces must be tested and approved by architect or project owner prior to doing the complete project.
- Do not apply to surfaces containing 15% or higher moisture content or hydrostatic pressure.
- Air and surface temperatures must be between 50°F. and 90°F during application.
- Sprinklers that come into contact with the application must be turned off for at least two days prior to and two days after application to maximize the coating performance. Redirect the sprinklers so they do not make contact with the coatings.
- Do not apply in windy conditions.
- Do not apply to surfaces displaying a pH over 8.
- Protect the surrounding areas from overspray.
- Do not apply if rain is imminent within 48 hours.
- For application over previously painted surfaces, allow the paint to fully cure (at least 7-14 days; consult the paint's technical data sheet for exact cure time) before applying **PERMASHIELD PREMIUM**. Refer to "Caution" section on page 4.

APPLICATION:

A continuous application will ensure a smooth and level coat with no lines or streaks to disfigure the surface. The application should not be stopped part of the way across an area and completed later.

PERMASHIELD PREMIUM should be applied at an approximate rate of 200-250 square feet per mixed gallon, yielding 3-4 dry mils per coat. Two coats are required for 5-20 Year Warranty and three coats are required for Lifetime Warranty.

PERMASHIELD PREMIUM can be applied by brush, roller or an airless sprayer with a tip size of .013 to .017 inches. The spray tip should be new and not stretched from previous uses. Make sure to follow the spray application with an immediate back roll.

Allow 4-6 hours drying time (do not exceed 12 hours) prior to applying the second coat. After application, allow the **PERMASHIELD PREMIUM** to cure for a minimum of 48 hours in dry conditions. Allow up to five days for full cure and hardness (depending on temperature) before exposing the system to markers and spray paint tagging.

PERMASHIELD PREMIUM can be applied directly to properly prepared surfaces such as primed metal and previously painted water based epoxies and urethanes. Abrade and clean the previous water base coating to provide tooth for the **PERMASHIELD PREMIUM**. Always conduct a test patch to ensure the proper adhesion.

Note: For applications over horizontal surfaces, wood, steel or metal contact Monopole, Inc. for more information.

CLEAN-UP:

Do not allow **PERMASHIELD BASE** and **PERMASHIELD PREMIUM** to dry in the spray equipment. Empty spray equipment and wash with water while the material is fresh. Keep in mind the 1-2 hour pot life of **PERMASHIELD PREMIUM** (the mixture will thicken). Schedule your mixing, application and clean up accordingly.

MURALS:

PERMASHIELD PREMIUM can be applied over murals that are not classified as "permanent" and won't be touched up in the future. It is not suitable for application over painted murals classified by the Federal, State, or City Counties as "Artwork" which is subject to continuing redesign and refinish. It would be extremely difficult to remove this permanent/non reversible system in order to redo the murals.

LIMITATIONS:

PERMASHIELD PREMIUM does not seal inaccessible areas. It will not bridge cracks, fill large pores or compensate for flawed construction. Exposed walls must be capped and the backside of parapet walls must be sealed, flashing must be in place and weep holes and drains installed and functioning (where applicable).

GRAFFITI REMOVAL:

REMOVER: CITRUS CLEAN SUPER

CITRUS CLEAN SUPER (#9800) is a water-miscible, easy to use, concentrated cleaner/remover. It is designed to remove and clean graffiti from surfaces that are protected with **PERMASHIELD PREMIUM Graffiti Control System**.

- A. Spray **CITRUS CLEAN SUPER** directly on the graffiti and allow 2 minutes of dwell time. Do not allow the cleaner to dry.

Gently agitate with a stiff bristle nylon brush or nylon scour pad working the cleaner into the graffiti. Spray more cleaning solution to maintain a wet surface and to remove the dissolved graffiti. When the graffiti removal is complete and all graffiti is dissolved, flush the surface thoroughly with water to remove all residues. Do not flush the surface with water if the graffiti removal is incomplete. If the removal is incomplete and exposed to water, allow the water on the surface to fully dry for 1-2 hours (wipe the surface dry) before repeating the above steps.

- B. **CAUTION!** Do not allow **CITRUS CLEAN SUPER** or graffiti run downs (from cleaning the surface) to dry on the surface.
- C. **CITRUS CLEAN SUPER** is the required graffiti remover for **PERMASHIELD PREMIUM**. Do not use solvents or other chemicals such as MEK, lacquer thinners, etc.

WARRANTY:

Monopole Inc. warrants the **PERMASHIELD PREMIUM** Graffiti Control System for a 5-20 years as long as the substrate, application, and removal methods meet the guidelines. During the duration of the year warranty no additional graffiti coatings will need to be applied. After each graffiti removal the warranty protects against yellowing, shadowing, ghosting, or chemical staining.

PERMASHIELD PREMIUM warranties are available on an individual job basis and must be approved prior to application. Contact Monopole's service department for further information. The warranty is only valid using **CITRUS CLEAN SUPER** as the remover.

WARRANTY REQUIREMENTS:

1. The purchaser must obtain a written specification letter from Monopole, Inc. prior to the application outlining the application, substrate, and removal methods.
2. The applicator shall warrant that they have applied the materials in compliance with Monopole Inc's written specifications and instructions upon application completion.
3. Attempts to remove graffiti defacing from a surface treated with **PERMASHIELD PREMIUM** Graffiti Control System must be performed according to the exact procedure explained on the technical bulletin and specification letter. No other chemical cleaners should be used except **CITRUS CLEAN SUPER**.

SAFETY & STORAGE:

Contact with eyes can create irritation. If in contact, flush the eye area with water for 10 minutes. If swallowed, do not induce vomiting and consult a physician. Use in well ventilated areas. Keep the container tightly closed when not in use. Store in dry, cool areas in temperatures between 55°F-95°F. Consult SDS for additional details.

PACKAGING:

PERMASHIELD PREMIUM is available in a 96 OZ Kit or a 3-Gallon Kit.

The volume mixing ratio is 2:1 (2 Parts A to 1 Part B).

Matte: Item No. 5600-96Oz: 96 Ounce Kit; 5600-03: 3-Gallon Kit

Gloss: Item No. 5650-96Oz: 96 Ounce Kit; 5650-03: 3-Gallon Kit

Caution! Painted & Stucco Surfaces

PERMASHIELD graffiti resistant coatings are clear non-yellowing products and may be used over acrylic painted or unpainted surfaces. However on rare occasion certain pigmented paint and color integrated stucco formulations (especially powdery stucco) contain a biocide that may create yellowing when top coated with a clear graffiti resistant coating. This rare phenomena of ambering occurs on ~1 out of 50 painted/color or integrated stucco jobs. Yellowing can be severe and normally appears within 3-7 days of direct sunlight exposure, particularly during hot weather. This rare occurrence can be addressed on the test patch.

If ambering has occurred (or to minimize the chance of it occurring), allow the fresh paint and/or stucco to fully cure (1-2 weeks minimum for paint and 28 days for fresh stucco), prior to applying a clear graffiti resistant coating. Consult the manufacturer of the paint coating and/or stucco to determine the full curing time.

To ensure proper results, Monopole requires applying a small test patch on each of the different paints and stucco surfaces prior to product application. It is very important that these test patches receive direct UV exposure. Allow the test areas 4-7 days of dry time (in direct sunlight) and then check for ambering prior to proceeding with the job. Monopole is not responsible for yellowing, whitening, discoloration, or any other consequential damages associated with the application of our **PERMASHIELD GRAFFITI RESISTANT** coatings. The end user shall determine the product's suitability and assumes all risk and liability.

TABLE 1

Product Qualifications / Approvals	
Cal Green	Yes
OTC (Industrial Maintenance)	Yes
SCAQMD (Industrial Maintenance)	Yes
CARB (Industrial Maintenance)	Yes
LEED (New Construction)	Yes
LEED (New Schools / CHPS)	Yes
LAUSD Exclusive Specification	Yes
Los Angeles RR	RR25080-T
MPI Approved Product	#105
CALTRANS	08-09-017
CALTRANS Office of Health and Safety Services	Yes
Nevada DOT (QPL Approved per SPEC. 502.02.05a)	Yes
Texas Type II Permanent, Water Cleanable Classification Anti-Graffiti Coatings	Complies with DMS-8111

TABLE 2

CHEMICAL RESISTANCE: (ASTM D1308)	
MEK double rubs.....	300+ cycles (Level 5)
Skydrol	No effect after 7 days
Brake Fluid	No effect after 7 days
Gasoline	No effect after 7 days
Motor Oil.....	No effect after 7 days
Betadine	No effect after 24 hours
50% NaOH	No effect after 24 hours
14% NH4OH	No effect after 24 hours
10% Acetic Acid	No effect after 24 hours
10% H2SO4.....	No effect after 24 hours
10% HCL	No effect after 24 hours
10% Bleach	No effect after 24 hours
DI Water.....	No effect after 24 hours
IPA	No effect after 4 hours
Toluene	No effect after 4 hours
Acid Rain	No effect after 4 hours

TABLE 3

GRAFFITI RESISTANCE: (ASTM D6578)

Marking Substance:	Recommended Cleaners:	Cleanability Levels:
Dixon Wax Crayon, Blue	Dry Cotton Cloth	1
Crayola, Water Based Marker Black	Dry Cotton Cloth	1
Sanford Sharpie, Solvent Based Blue	Citrus Clean Super 9800	3
Avery, Permanent Marker Black	Citrus Clean Super 9800	3
Krylon, Solvent Based Spray Paint Red	Citrus Clean Super 9800	3

cleanability levels 1-5 are defined as:

- Level 1: Graffiti completely removed with dry cotton cloth.
- Level 2: Graffiti completely removed with commercial aqueous detergent.
- Level 3: Graffiti completely removed with Citrus Clean Super 9800.
- Level 4: Graffiti completely removed with industrial cleaner/Isopropanol
- Level 5: Graffiti completely removed with MEK

Requirements for ASTM D6578 Performance

Property	Test Method	Requirement	Obtained
Graffiti Resistance	ASTM D6578	Cleanability Level 8, 9 or 10	3-Jan
Recleanability	ASTM D6578	Minimum 10 Cycles	200+ Cycles
Fluid Resistance	ASTM D 1308 ¹	No Blistering, Discoloration, Softening or Adhesion Loss	Pass
Set-To-Touch Time	ASTM D1640 ²	4-6 Hours	Pass
Dry-Thorough Time	ASTM D1640 ²	24 Hours	Pass
Dry Hard	ASTM D1640 ²	48 Hours	Pass
Complete Cure & Hardness	ASTM D1640 ²	5-7 Days	Pass

¹Spot Test using MEK

²3-Mil Wet Film Tested @77°F

WARRANTY INFORMATION: MONOPOLE believes that the information in this publication is an accurate description of the typical characteristics and/or uses of the product or products. But it is the end users responsibility to thoroughly test the product in the specific application to determine its performance efficacy and safety. Since use of this product is beyond our control, Monopole, Inc. cannot assume any risk or liability for results obtained when not used according to our specifications and directions. Unless MONOPOLE provides a specific written statement of fitness for a particular use, MONOPOLE'S sole warranty is that the product will meet its current sales specifications. MONOPOLE specifically disclaims any other expressed or implied warranty, including the warranty of merchantability and fitness for use. The exclusive remedy and MONOPOLE'S sole liability for breach of warranty is limited to a refund of the purchase price or replacement of product proven to be defective. In no event shall the seller be liable for any loss of profits or other consequential damages. Under no circumstance will MONOPOLE pay labor charges.