

PERMASHIELD® 200



2K Water Based Aliphatic Polyurethane

MADE IN U.S.A.

9

HIGH PERFORMANCE COATING 09960
PROTECTIVE COATINGS

MONOPOLE INC.
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PRODUCT DESCRIPTION:

PERMASHIELD 200 is the most advanced two-component water-based aliphatic polyurethane on the market. The unique high performance structure exhibits outstanding film hardness and excellent resistance against abrasions, chemicals, stains, direct/reverse impacts and ultraviolet light.

ADVANTAGES:

- Universally Compliant, Environmentally Friendly, Low VOC
- HAPS Free (Hazardous Air Pollutants), No Fumes
- Suitable for USDA Inspected Facilities
- Top Tier Chemical, Solvent, Water, Oil and Graffiti Resistance
- Outstanding Hardness, Durability and Abrasion Resistance
- Top Tier Cleanability and Stain Resistance
- Resistant to Hot Tire Pick-Up
- Flash Rust Inhibitive formula for DTM Environments
- Creates a Top Tier Dry Erase Environment When Applied to a Surface
- High Solids, Versatile General Maintenance Coating
- Available in High Gloss 90°, Matte 5°, Clear or Colors
- When the surface temperature is between 50-70°F, the **PERMASHIELD 200** can be accelerated for same day return to service.

BASIC USES:

PERMASHIELD 200 can be applied to interior, exterior, vertical or horizontal, concrete, masonry, stucco, wood, vinyl-composite tile (VCT), and prepared ferrous and non ferrous metals, etc. It can be used as an industrial or residential coating for: commercial buildings, convention centers, stadiums, hospitals, warehouse floors, garages, universities, airports, shopping centers, schools, food processing plants, transportation, government facilities, etc.

PERMASHIELD 200 is urine resistant for use in pet & dog kennels.

MIXING:

- Stir Part A to disperse product.
- Pour the entire contents of Part B into Part A.
- Mix for 3-5 minutes. **No partial mixing.**
- For spray applications, the viscosity may be reduced with water at a maximum of 8 ounces per gallon. Add slowly to the mixture while stirring.
- Do not use mixed product after 2 hours.

SURFACE PREPARATION:

Surfaces must be clean, dry and free of chalk, grease, oils, salts and contaminants that inhibit proper adhesion.

Concrete And Masonry: Must be cured at least 28 days. Level protrusions and repair cavities, voids, holes, cracks, etc. that are larger than 1/16". Dense, non-porous concrete should be grinded, sandblasted, abrasive blasted (ASTM D4259), acid etched (ASTM D4260), or primed with **MONOCHEM 21**.

Non-Ferrous Metals (galvanized, aluminum, stainless steel): Remove all oils or films with a neutral detergent or emulsion cleaner. Blast lightly with fine abrasives or conduct a light etching. Then rinse the surface with Zinc and coat within 3 hours to avoid oxidation.

Ferrous Metals: Remove all the 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 the surface with Zinc and apply **PERMASHIELD 200** within 3 hours to avoid oxidation.

TECHNICAL DATA:

Composition	100% Aliphatic Polyurethane
Clear Solids by Weight (ASTM D2369).....	54% ± 2
Clear Solids by Volume (ASTM D2697).....	51% ± 2
White Base Solids by Weight (ASTM D2369).....	59%± 2
White Base Solids by Volume (ASTM D2697).....	55% ± 2
VOC level (ASTM D6886)	< 12 g/L
Film appearance, Gloss, (ASTM D-523) 60°	>90
Matte (ASTM D-523) 60°	<5
Weight per gallon kit	8 Lbs
Mixed viscosity @75°F.....	85-95 KUs
Pot Life after both components are mixed.....	1-2 hours
Tensile strength (ASTM D-412).....	5950 psi
Elongation (ASTM D-412)	150%
Modulus @100% elongation.....	4190 psi
Hardness, pencil 2 weeks (ASTM D-3363)	Gouge: 4H; Scratch: 2H
Taber Abrasion Resistance (ASTM D-4060)	~45 mg loss/1000 cycles
Impact Resistance (ASTM D-2794) Reverse.....	160 In/Lbs
Adhesion Test (ASTM D4524/ISO 4624)	Porous Concrete: 2901 PSI
.....Sanded Ferrous: 2792 PSI	
Outdoor Weathering (ASTM G 155-05a)	8000 hours
Cyclic Weathering (AASHTO R-31): No Blistering, Cracking, Softening or Delamination.	Maximum Change of 10 Gloss Level.
Recoat Time	4-6 Hours
Dry Hard.....	48 Hours
Chemical Resistance (ASTM D1308).....	See Table 1
Salt Fog Spray aluminum (ASTM B117)	Passes 2,000 Hours

Factor of Friction (ASTM C1028)

Permashield 200	Concrete (Wet)	Concrete (Dry)
Textured	0.85	0.94
Smooth	0.60	0.75

Water Based Painted Surfaces (acrylic/latex): Lightly sand or abrade glossy surfaces to provide tooth.

Oil Based Painted Surfaces: Prime with **MONOCHEM 21**. Conduct a thorough test patch and adhesion test.

Caution: Horizontal surfaces coated with **PERMASHIELD 200** can become slippery when exposed to moisture. Please consult the Safety Information section.

APPLICATION:

A continuous application will ensure a smooth and level coat that is free of lines and streaking. Applications should not be stopped part way across an area and completed later.

Two coats of **PERMASHIELD 200** are required. For concrete surfaces, apply at a spread rate of 175-250 square feet per gallon (depending on surface porosity), yielding 3-4 dry mils per coat. For metal surfaces, apply at an approximate spread rate of 300 square feet per gallon. Do not exceed 5 wet mils because micro bubbling or hazing may occur. To obtain proper adhesion between coats it is imperative that recoating be done within 4-6 hours (do not exceed 12 hours between coats or sanding may be required).

For best results use the best quality roller, brush, or airless sprayer. Extra care should be taken not to cause air bubbles. For larger jobs we recommend using a sprayer.



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PERMASHIELD 200 can be applied directly to cleaned and properly prepared coatings like water based acrylics, epoxies and urethanes. Abrade and clean the previous paint to provide tooth for the new coating.

In all applications, we require conducting a test patch to ensure proper compatibility, adhesion and appearance. All surfaces must be tested before doing the entire project. Prime with **MONOCHEM 21** if there are adhesion issues with **PERMASHIELD 200**.

RECOMMENDED PRIMERS:

MONOCHEM 21: Ideal for non-porous surfaces and coating over water/oil/solvent/alkyd/unknown based coatings.

MONOBOND: Ideal for coating over single component water based coatings and most smoother surfaces.

AQUAPRIME: For surfaces containing a PH of 8-16.

MONOBOND RI: For surfaces requiring a rust inhibitive primer.

PRECAUTIONS:

- Do not apply heavier than 5 wet mils per coat to avoid microblistering and an over applied milky appearance.
- Air and surface temperatures must be between 50°F -90°F during the application.
- Do not apply during windy conditions. Protect surrounding areas from overspray.
- Do not apply if rain is eminent within 48 hours after application.
- Do not dilute. Use as-is.
- Do not apply to surfaces containing > 15% moisture.
- Do not apply to surfaces displaying a pH over 8.
- Do not apply to surfaces that have hydrostatic pressure.

STANDARD DRY TIME:

Light Foot Traffic: 24 Hours Full Foot Traffic: 48 Hours
 Heavy Objects: 5 Days Hot Tire Resistance: 5 Days
 Full Cure: 5 Days Full Chemical Resistance: 5 days

ACCELERATED DRY TIME:

*In cooler environments (< 75°F), use **ACCELERATOR P200** (2 oz / gallon) with **PERMASHIELD 200** to improve the dry/cure time. For detailed information, refer to the **ACCELERATOR P200** technical data sheet.*

Pot Life: 15-20 minutes
 Recoat Time: 1-2 Hours
 Foot Traffic: 6-8 Hours
 Hot Tire Resistance: 24-48 Hours

PACKAGING:

PERMASHIELD 200 is available in clear or pigmented, matte or gloss finishes. Clear kits are packaged in a one-gallon kit and a five-gallon kit. Color kits are only available in one-gallon kits.

MIXING RATIO- 2.5:1

One Gallon Kit: **Part A:** 80 OZ, **Part B:** 32 OZ
 One Gallon Kit totals: 112 oz (not a full gallon)
 Approximate Coverage: 175 - 250 sq. ft. per kit (1 Coat)
 Five Gallon Kit: **Part A:** 400 OZ, **Part B:** 160 OZ
 Five Gallon Kit totals: 560 oz (totals 4.375 gallons)
 Approximate Coverage: 875 - 1,250 sq. ft. per kit (1 Coat)

- ITEM NO. 5350: Clear Gloss
- ITEM NO. 5360: White Tint Base Gloss
- ITEM NO. 5370: Neutral Base Gloss
- ITEM NO. 5355: Clear Matte
- ITEM NO. 5365: White Tint Base Matte
- ITEM NO. 5375: Neutral Base Matte

Product Qualifications	
Cal Green	Yes
OTC (Industrial Maintenance)	Yes
SCAQMD (Industrial Maintenance)	Yes
CARB (Industrial Maintenance)	Yes
LEED (New Construction)	Yes
LEED (New Schools / CHPS)	Yes

MPI APPROVED PRODUCT:

MPI #205 Graffiti Protection Topcoat for Unpainted Concrete
 General Maintenance Topcoat

SAFETY INFORMATION:
 Monopole Inc. recommends the use of aggregates for skid resistance in all of its floor coatings that may be exposed to wet, oily or greasy conditions. The type of activity on the floor surface may determine the degree of slip resistance required for a specific area. Monopole Inc. will not be responsible for injury caused in a slip or fall situation. It is the end users responsibility to test and determine the suitability and safety of our coatings for

CHEMICAL RESISTANCE: (ASTM D1308)

MEK double rubs	300+ cycles
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
20% 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

TINTING:

Always test for compatability before tinting the **PERMASHIELD 200**. Only use high quality waterborne industrial pigments.
 •White Base Maximum Tint Load: 4 Oz.
 •Neutral Base Maximum Tint Load: 8 Oz.

EQUIPMENT CLEANUP:

Equipment should be cleaned with water or a mild detergent immediately after use. Clean all the equipment while material is fresh or a legally compliant paint remover may be required.

SHELF LIFE:

PERMASHIELD 200 Gloss Part A: 12 Months
PERMASHIELD 200 Matte Part A: 6 Months
PERMASHIELD 200 Part B: 12 Months.

WARRANTY INFORMATION: All the recommended products will mirror the performance and soundness of the structure, previous coatings and filling/patching (repair) materials. For an ideal application, we recommend removing the existing coatings. If this is not an option, remove all unsound, loose and/or poorly adhering paint and conduct thorough test patches. Delamination or the failure of the existing/non Monopole coatings is not covered by any performance warranty. 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.