

MONOCHEM

# SYSTEM 200<sup>®</sup>

TECHNICAL  
BULLETIN



MADE IN U.S.A.

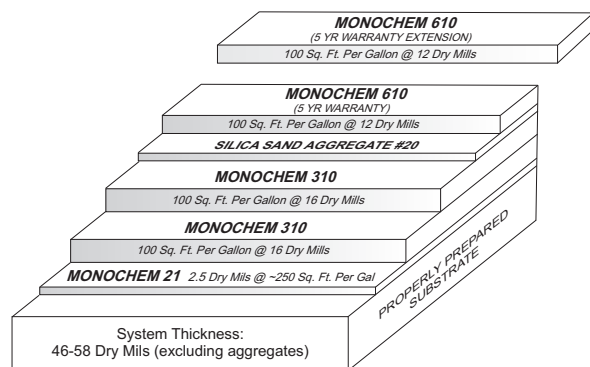
## Elastomeric Waterproofing Deck System

### PRODUCT DESCRIPTION:

**MONOCHEM DECK SYSTEM 200** is a high performance, liquid applied, elastomeric membrane polyurethane system that displays ultimate waterproofing properties.

#### MATERIALS:

<b>MONOCHEM 21</b>	Epoxy Primer- 100% Solids
<b>MONOCHEM 310</b>	Moisture Cured Polyurethane Base Coat
<b>AGGREGATES</b>	Silica Sand #16 or #20
<b>MONOCHEM 610</b>	Moisture Cured Polyurethane Top Coat
or	
<b>PERMASHIELD 2000</b>	Fast Curing Aliphatic Polyurea Top Coat



#### FEATURES:

- 5 & 10 Year Warranty Periods
- 600% Elongation
- Zero VOC topcoat option
- 48 DMT excluding aggregates
- Superior Durability & Lightweight
- UV, Chemical, Abrasion and Hot Tire Resistant
- Outstanding Weather Resistance
- Flexible Over Low Temperature Range
- Quick Drying option available: 20-24 hours for hot tires & 5-6 hours for normal foot traffic
- Easily adheres to concrete, wood, metals, masonry, existing coatings (water/oil/solvent/alkyd/unknown bases), glazes, etc

#### APPLICATIONS:

- Parking Structures/Parking Decks
- Helicopter Pads
- Concrete Roofs
- Stadiums and Convention Centers
- Mechanical Rooms
- Elevated or On Grade Walkways/Promendes
- Pedestrian Bridges
- Balconies
- Landings
- Floors
- Stairways

#### SURFACE CONDITION:

- Concrete must be cured for 28 days.
- The substrate moisture content must remain below 15% on cementitious surfaces and below 13% on wood.

- Do not apply to surfaces displaying hydrostatic pressure. The Visqueen Test (ASTM D4263) or calcium chloride test can be used.
- The surface temperature must be between 50-90°F during the application.
- Job specifications require that surfaces be accepted by the coating applicator prior to the start of work. Substrates which are not structurally sound or which do not meet specification requirements for surface condition should not be accepted.

#### SURFACE PREPARATION:

- The surface must be clean and free of adhesion affecting contaminants. Paints, greases and oils must be thoroughly removed by using TSP, grinding, water blasting, sand blasting or shot blasting.
- Ensure that there is 1/4" slope per foot to avoid the damaging effects of standing water.
- Fill all gaps, cracks, seams, holes, joints, voids, etc. larger than 1/16" with a paintable floor patch.
- Ideally cut or grind off high spots to provide a smooth and even surface.

#### ELEVATED DECK ADDITIONAL STEPS:

- Wood Decks: Make sure to completely fill the gaps between planks of wood and the seams of tongue and groove decks with either a paintable, elastomeric, urethane caulk, fiber glass mesh, or polyester tape.
- Pay special attention to filling gaps that may occur where the railing meets the floor.
- Make sure the screws are all tight. Apply a paintable elastomeric caulk over the tight screws to fill in the gap. This will provide a smooth sound surface for the coatings to adhere to.
- Woods containing tannin acids (ex. Redwood, Pine, or Cedar) require a stain blocking primer to protect against the tannin bleeding prior to product application.
- Replace all damaged or rotted wood.
- Make sure the underside of the deck and the vertical lip areas are completely sealed or painted (the paint must bead water). This is required because if moisture soaks in underneath the coatings, hydrostatic pressure will be created. This will lead to product delamination during the evaporation process.
- Parapet /free standing deck walls: Wrap the chosen system (no sand required) for the base 2" of the wall (make sure the flashing is filled if it is cracked).
- Also ensure that all the wall sides (front, back, cap, and sides if applicable) are sealed and do not absorb moisture.

#### PHASE 1:

##### MONOCHEM 21 (Required Primer)

- Using a low speed "Jiffy" type mixer, mix the **MONOCHEM 21** Part A (do not mix the Part B by itself) for approximately 2-3 minutes. Then mix the components together for 3-5 minutes, scraping the bottom and sides of the mixing container at least once. Do not aerate the mix. Apply to the prepared surface using a high quality foam or core roller. Always test first. Allow the primer to dry for approximately 3-6 hours, depending on temperature and humidity. Pot Life: 15-20 minutes.
- Top coat the **MONOCHEM 310** when it is tacky but not wet enough to leave a finger print. Do not allow the **MONOCHEM 21** to dry for more than 14 hours before applying the **MONOCHEM 310**.
- MONOCHEM 21** approx. coverage rate: 200-300 sq. ft. per gallon.



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9

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MONOPOLE INC.  
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#### Tape or Fiberglass Mesh:

1. Apply the tape or fiberglass mesh over a thicker coat of **MONOCHEM 21** (applied to those areas at 150-200 sq/ft per gallon) while the coating is still wet.
2. Allow 3-6 hours of dry time until the **MONOCHEM 21** is slightly tacky (do not exceed 14 hours in 70°F unless the coating is still wet) then apply an additional coat of **MONOCHEM 21** over the tape or mesh areas only to encapsulate the tape or mesh.
3. Allow 3-6 hours of dry time (do not exceed 14 hours in 70°F unless the coating is still wet) and apply a blanket coat of **MONOCHEM 21** over the entire surface where the **SYSTEM 200** will be applied. This will count as the primer/first coat of the **SYSTEM 200** application.

NOTE: Temperatures and humidity will affect dry times. If the 20 hour recoat window of **MONOCHEM 21** is ever exceeded, just scuff/degloss the dry coating and apply one more coat of **MONOCHEM 21**.

#### **PHASE 2:**

##### **MONOCHEM 310** (Basecoat Membrane)

- Mix **MONOCHEM 310** for 3-5 minutes. Make sure to keep mixing the product until a homogenous mixture and color is achieved. Avoid trapping air into the product while mixing. Apply using a 1-1.25" long haired roller or notched squeegee.
- MONOCHEM 310** approximate coverage rate: 100 sq/ft per gallon resulting in 16 dry mils. Two coats are required.
- The recoat time should be between 16-24 hours. Do not exceed 36 hours.

#### **PHASE 3:**

- Apply the second coat of **MONOCHEM 310** at the rate of 100 sq/ft per gallon resulting in 16 dry mils. Immediately while this 2nd coat is wet, broadcast washed dry, crystal silica sand size 16-20 until saturation (12-15 lbs per 100 square feet). This is required to create a non-skid application.
- Top coat the 2nd coat of **MONOCHEM 310** after 16-24 hours. Do not exceed 48 hours.

#### **PHASE 4:**

*\*Prior to applying the chosen top coat, broom out any sand that was not completely encapsulated into the basecoat membrane.*  
*\*For parking structure ramps and turning areas, contact our technical support for the additional required step in PHASE 4.*

#### **TOP COAT OPTION: MONOCHEM 610**

- Mix **MONOCHEM 610** for 3-5 minutes. Make sure to keep mixing the product until a homogenous mixture and color is achieved. Avoid trapping air into the product while mixing. Apply using a 1-1.25" long haired roller or notched squeegee.
- MONOCHEM 610** approximate coverage rate: 100 sq. ft. per gallon resulting in 12 dry mils.
- MONOCHEM 610** can be driven over after 3 days of dry time.

#### **TOP COAT OPTION: PERMASHIELD 2000 Fast Cure**

- Mix Part A of the **PERMASHIELD 2000** for 5 minutes by itself. Then add Part B to the Part A. Use care to scrape all the Part B out of the can to ensure a 2:1 mixing volume ratio. Use a Jiffy mixer at medium speeds until a homogenous mixture and color is obtained (~5 minutes). Mix frequently during the application to maintain uniform color. Do not whip to much air into the mixture because this may result in blisters or a shorted pot life.
- PERMASHIELD 2000** approximate coverage rate: 125 sq. ft. per gallon resulting in 13 dry mils.
- Pot Life: 15 Minutes. Mix only enough material that can be applied in 5 minutes.**
- Hot tire resistant:** 20-24 hours; **Foot Traffic:** 5-6 Hours.

#### **FINISHED SYSTEM:**

When applied properly as directed above, the **MONOCHEM DECK SYSTEM 200** will provide approximately 48 dry mils excluding aggregates. Ramps, turn radii and other heavy areas yield approximately 60 dry mils excluding aggregates.

#### **COVERAGE:**

<u>Product</u>	<u>Sq. Ft. per Gallon</u>
MONOCHEM 21	200-300
MONOCHEM 310	100
MONOCHEM 610	100
PERMASHIELD 2000	125
SILICASAND	12-15 Pounds per 100 Sq./Ft

#### **CURING TIME:**

•**MONOCHEM 610:** Vehicular Traffic: 3 Days. Foot Traffic: 1 day light, 2 days normal.

•**PERMASHIELD 2000:** Vehicular Traffic: 20-24 Hours; Foot Traffic: 5-6 hours.

**Optional Fast Cure:** The **Accelerator M200** shortens the cure time of the **MONOCHEM 310** to 10-12 hours and the **MONOCHEM 610** to 24-36 hours, depending on temperature and humidity. **MONOCHEM 310** recoat time is 10-12 hours; **MONOCHEM 610** recoat time is 4-8 hours (when the surface becomes tack free).

**LIMITATIONS:** **MONOCHEM DECK SYSTEM 200** should not be subjected to rising water tables or hydrostatic pressure on slab-on-grade decks. For complete details, refer to each products technical data sheets and Material Safety Data Sheets.

#### **CLEAN-UP INSTRUCTIONS:**

Clean equipment with a urethane grade environmentally safe solvent, as permitted under local regulations, immediately after use. Dried products will require mechanical abrasion for removal.

#### **PACKAGING:**

•**MONOCHEM 21:** 2:1 Mixing Volume Ratio  
96 Ounce Kits or 3 Gallon Kits

•**MONOCHEM 310:** 1 Part  
1-Gallon Cans or Five-Gallon Pails

•**MONOCHEM 610:** 1 Part, Pigment Paste on the side  
1-Gallon Cans or 5-Gallon Pails  
Pigment Paste: 8 Oz. for 1 Gallon or 32 Oz. for 5 Gallon

•**PERMASHIELD 2000:** 2:1 Mixing Volume Ratio  
96 Ounce Kits or 3 Gallon Kits

#### **SHELF LIFE & STORAGE:**

**MONOCHEM 21:** 1 Year  
**MONOCHEM 310 & 610:** 6 Months  
**PERMASHIELD 2000:** 6 Months

Store indoors at room temperature. Protect from moisture and freezing. Discard any unused or left over materials.

#### **WARNING:**

The products in this system contain isocyanates, solvents and curatives. Please review the Material Safety Data Sheets for additional safety information.

#### **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

**MATERIAL PROPERTIES @ 75°F & 50% RH**

	<b>MONOCHEM 21 Primer</b>	<b>MONOCHEM 310 Base Membrane</b>	<b>MONOCHEM 610 Top Coat <i>Option 1</i></b>	<b>PERMASHIELD 2000 Top Coat <i>Option 2: Fast Cure</i></b>
Mixed Viscosity, cps:	600 + 50	6500 + 1500	2000 + 500	2300±500
Gel Time, (100 gms), Min.:	65			
Pot Life @75°F, 50%RH:	15-20			12-16
Solids, % by Weight:	100	100	80 + 2	100
Tack Free Time, Hours:	3-6	10-16	10-16	0.75-1.5
Tensile Strength, psi:	8870	650	3500	2600
ASTM D638-10 <small>(Monochem 21)</small>				
ASTM D412 <small>(Monochem 310, 610, Permashield 2000)</small>				
Tensile Elongation, %:	5.2	600	215	40±10
Tear Strength, pli:	NA	220	500	375±25
Hardness, Shore A:	82	55	95	65±2
ASTM D2240				
Abrasion Resistance	0.003	NA	0.010	0.002
CS 17 Wheel, 100 gms:				
Dry Mil Per Coat:	3	16*	12	16
*Two Coats				
Color:	Clear/Colors	Gray	6 Colors	Any Color
VOC:	< 90 g/L	< 10 g/L	< 100 g/L	Zero