Protective & Marine Coatings

# MACROPOXY® 5000
## PENETRATING EPOXY PRIMER / SEALER FOR CONCRETE & STEEL

| | | |
|---|---|---|
| PART A | B58W20 | TRANSLUCENT WHITE |
| PART A | B58C20 | CLEAR |
| PART B | B58V20 | HARDENER |

Revised: January 18, 2024

## PRODUCT INFORMATION

4.85

## CONCRETE
### *PRODUCT DESCRIPTION*

**MACROPOXY 5000** is an ultra high solids, penetrating epoxy primer / sealer designed for priming and sealing concrete prior to the application of coatings and linings. It has excellent wetting properties and penetrates deeply into concrete to aide in controlling outgassing and to provide a firm anchor for subsequent topcoats.

- A penetrating primer / sealer for concrete and masonry surfaces
- Excellent wetting properties
- VOC less than 50 g/L
- Suitable for application to SSD concrete

## CONCRETE
### *RECOMMENDED USES*

For use as a primer / sealer over prepared concrete surfaces.

- Wastewater & Sewer collection systems
- Chalky surfaces in atmospheric conditions
- Industrial applications
- Suitable for use in USDA inspected facilities
- Suitable for use on floors and tanks
- Suitable for immersion when topcoated with a Sherwin-Williams approved lining

## CONCRETE
### *PRODUCT CHARACTERISTICS*

**Color:** Clear*, Translucent White

*for immersion applications, only use Clear

**Recommended Spreading Rate per coat:**

| | Minimum | Maximum |
|---|---|---|
| **~Coverage sq ft/gal** ($m^2$/L) | **400** (9.8) | **500** (13.0) |

**Drying Schedule @ 400-500 sq ft/gal (9.8-13.0 $m^2$/L):**

| | @ 40°F/4.5°C | @ 77°F/25°C *50% RH* | @ 100°F/38°C |
|---|---|---|---|
| **To touch:** | when fully penetrated / no surface film | | |
| **To recoat:** | | | |
| **minimum:** | when fully penetrated / no surface film | | |
| **maximum**:** | 7 days | 7 days | 7 days |
| **maximum***:** | 30 days | 30 days | 30 days |
| **To cure:** | refer to topcoat curing schedule | | |

*Drying time is temperature, humidity, and film thickness dependent.*

**for immersion applications with acceptable topcoats (see Recommended Systems on page 3)

***for atmospheric applications with acceptable topcoats (see Recommended Systems on page 3)

## STEEL
### *PRODUCT DESCRIPTION*

**MACROPOXY 5000** is a rust-inhibitive, pigmented, ultra high solids, penetrating epoxy primer / sealer designed for use over marginally prepared steel and aged coatings. It has excellent wetting properties and penetrates tight rusted steel to provide a firm anchor for subsequent topcoats. In addition, Macropoxy 5000 can be used to overcoat aged coatings and act as barrier coat for a variety of topcoats without the need for an intermediate coat.

- A penetrating primer / sealer for tight rusted surfaces and aged coatings
- Excellent wetting properties
- VOC less than 50 g/L
- Barrier coat for a broad range of topcoats

## STEEL
### *RECOMMENDED USES*

For use as a primer / sealer over prepared steel surfaces.

- Over white rusted and zinc rich coatings
- Petrochem exploration and offshore platforms
- Chalky surfaces in atmospheric conditions
- Tanks, piping, structural steel and vessels
- Industrial applications
- Marine applications
- Over marginally prepared steel when abrasive cleaning is not possible
- Suitable for use in USDA inspected facilities
- Ideal for corrosion mitigation in maintenance coating programs
- Suitable for use in the Mining & Minerals industry
- Can be used as a metalizing sealer. Consult your Sherwin-Williams Representative.

## STEEL
### *PRODUCT CHARACTERISTICS*

**Color:** Clear, Translucent White

**Recommended Spreading Rate per coat:**

| | Minimum | Maximum |
|---|---|---|
| **Wet mils** (microns) | **1.0** (25) | **2.0** (50) |
| **Dry mils** (microns) | **1.0** (25) | **2.0** (50) |
| **~Coverage sq ft/gal** ($m^2$/L) | **800** (19.6) | **1050** (25.7) |
| Theoretical coverage **sq ft/gal** ($m^2$/L) @ 1 mil / 25 microns dft | **1600** (39.2) | |

**Drying Schedule @ 2.0 mils wet (50 microns):**

| | @ 40°F/4.5°C | @ 77°F/25°C *50% RH* | @ 100°F/38°C |
|---|---|---|---|
| **To touch:** | 4 days | 16 hours | 12 hours |
| **Dry to handle:** | 7 days | 24 hours | 16 hours |
| **To recoat:** | | | |
| **minimum:** | 4 days* | 16 hours | 12 hours |
| **maximum:** | 30 days | 30 days | 30 days |
| **To cure:** | 14 days | 7 days | 7 days |

** For brush or roll. Minimum recoat by spray application is 2 days. If maximum recoat time is exceeded, abrade surface before recoating.*

*Drying time is temperature, humidity, and film thickness dependent.*



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## CONCRETE
### *PERFORMANCE CHARACTERISTICS*

- Designed for industrial environments
- A high performance primer/sealer for masonry surfaces
- Suitable for immersion when topcoated with a Sherwin-Williams approved lining
- Deeply penetrates concrete surfaces to aide in outgassing control
- Designed to completely penetrate concrete surface, does not form a surface film
- Formation of surface film may require sweep blasting prior to application of liners for immersion
- Epoxy coatings may darken or yellow following application and curing

## STEEL
### *PERFORMANCE CHARACTERISTICS*

- Designed for industrial and marine environments
- Penetrates existing, tightly adhered rust to provide a "tight" substrate prior to subsequent coats
- Eliminates the need for intermediate coats
- Can also be used as a high performance primer/sealer for masonry surfaces
- Not for immersion service
- Dry heat resistance up to 200°F (93°C)
- Epoxy coatings may darken or yellow following application and curing

## CONCRETE
### *SURFACE PREPARATION*

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

**Concrete and Masonry**
For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3 (Atmospheric) CSP 3-6 (Immersion). Surfaces should be thoroughly clean and free of contaminants. New concrete must be cured at least 28 days @ 75°F (24°C). A.W. Cook and Sherwin-Williams mortars shall cure for a minimum 24 hours @ 75° F (24°C). Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement and hardeners. Fill bug holes, air pockets and other voids with an approved A.W. Cook or Sherwin-Williams approved cementitious or epoxy mortar, or Steel-Seam FT910.

**Follow the standard methods listed below when applicable:**
ASTM D4258 Standard Practice for Cleaning Concrete
ASTM D4259 Standard Practice for Abrading Concrete
ASTM D4260 Standard Practice for Etching Concrete
ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete
SSPC-SP 13/Nace 6 Surface Preparation of Concrete
ICRI No. 310.2R Concrete Surface Preparation

## STEEL
### *SURFACE PREPARATION*

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

**Iron & Steel**
Minimum surface preparation is Hand Tool Clean per SSPC-SP2. Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. For better performance, use Commercial Blast Cleaning per SSPC-SP6/NACE 3, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (1.0-2.0 mils / 25-50 microns). Prime any bare steel within 8 hours or before flash rusting occurs.

**Previously Painted Surfaces:**
If in sound condition, clean the surface of all foreign material. Smooth, hard or glossy coatings and surfaces should be dulled by abrading the surface. Apply a test area, allowing paint to dry one week before testing adhesion. If adhesion is poor, or if this products attacks the previous finish, removal of the previous coating may be necessary. If paint is peeling or badly weathered, clean surface to sound substrate and treat as a new surface as above.

**Surface Preparation Standards**

| | Condition of Surface | ISO 8501-1 BS7079:A1 | Swedish Std. SIS055900 | SSPC | NACE |
|---|---|---|---|---|---|
| White Metal | | Sa 3 | Sa 3 | SP 5 | 1 |
| Near White Metal | | Sa 2.5 | Sa 2.5 | SP 10 | 2 |
| Commercial Blast | | Sa 2 | Sa 2 | SP 6 | 3 |
| Brush-Off Blast | | Sa 1 | Sa 1 | SP 7 | 4 |
| Hand Tool Cleaning | Rusted | C St 2 | C St 2 | SP 2 | - |
| | Pitted & Rusted | D St 2 | D St 2 | SP 2 | - |
| Power Tool Cleaning | Rusted | C St 3 | C St 3 | SP 3 | - |
| | Pitted & Rusted | D St 3 | D St 3 | SP 3 | - |

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## CONCRETE
### *RECOMMENDED SYSTEMS*

| | | Dry Film Thickness / ct. Mils | (Microns) |
|---|---|---|---|
| **Concrete & Masonry, Immersion Thick Film / Severe Service***:** | | | |
| 1 ct. | Macropoxy 5000 (Clear) - 400-500 sq ft/gal (9.8-13.0 m²/L) | | |
| 1 ct. | Acceptable topcoat: | | |
| | Dura-Plate 6100* | 80.0-125.0+ | (2000-3125+) |
| | Dura-Plate 6000* | 80.0-250.0 | (2000-6250) |
| | Dura-Plate 6000 Mortar* | 125.0-500.0 | (3125-12500) |
| | Poly-Cote 115** | 80.0-250.0 | (2000-6250) |
| **Concrete & Masonry, Immersion Medium Film / Moderate Service***:** | | | |
| 1 ct. | Macropoxy 5000 (Clear) - 400-500 sq ft/gal (9.8-13.0 m²/L) | | |
| 1 ct. | Acceptable topcoat: | | |
| | Dura-Plate 6100* | 40.0-80.0 | (1000-2000) |
| | Dura-Plate 6000* | 40.0-80.0 | (1000-2000) |
| | Poly-Cote 115** | 40.0-80.0 | (1000-2000) |
| **Concrete & Masonry, Atmospheric:** | | | |
| 1 ct. | Macropoxy 5000* - 400-500 sq ft/gal (9.8-13.0 m²/L) | | |
| 1 ct. | Macropoxy 646 | 5.0-10.0 | (125-250) |

*Optional for outgassing control
**Primer required

Additional topcoat options:
***Dura-Plate 8200, Sherflex, Dura-Plate UHS, and Sher-Glass FF
Macropoxy 5500LT - for atmospheric service
Tank Clad HS - for atmospheric service

***consult your Sherwin-Williams representative for immersion suitability

The systems listed above are representative of the product's use, other systems may be appropriate.

## CONCRETE
### *PERFORMANCE TIPS*

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or porosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

No reduction of material is recommended as it can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

To avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Xylene, R2K4.

Only use Clear version of Macropoxy 5000 for concrete substrates for immersion.

Apply material when concrete temperature is decreasing.

Avoid application in direct sunlight.

Airless spray is acceptable for application; however, the product shall be backrolled to eliminate excessive millage and puddles.

Designed to completely penetrate concrete surface, do not form a surface film. Formation of Surface film may require sweep blasting prior to application of liners for immersion.

## STEEL
### *RECOMMENDED SYSTEMS*

| | | Dry Film Thickness / ct. Mils | (Microns) |
|---|---|---|---|
| **Steel:** | | | |
| 1 ct. | Macropoxy 5000 | 1.0-2.0 | (25-50) |
| 2 cts. | Macropoxy 646 | 5.0-10.0 | (125-250) |
| **Steel, zinc rich primer:** | | | |
| 1 ct. | Zinc Clad IV | 3.0-5.0 | (75-125) |
| 1 ct. | Macropoxy 5000 | 1.0-2.0 | (25-50) |
| 2 cts. | Acrolon 218 | 3.0-6.0 | (75-150) |
| **Overcoat System for Aged Coatings:** | | | |
| 1 ct. | Macropoxy 5000 | 1.0-2.0 | (25-50) |
| **Overcoat System for Steel Bridges:** | | | |
| 1 ct. | Macropoxy 5000 | 1.0-2.0 | (25-50) |
| 1 ct. | Epoxy Mastic Aluminum II | 4.0-6.0 | (100-150) |
| 1 ct. | Acrolon 218 | 3.0-6.0 | (75-150) |
| or | | | |
| 1 ct. | Hi-Solids Polyurethane 250 | 3.0-5.0 | (75-125) |

Acceptable topcoats:
Acrolon 218 HS
Pro Industrial DTM Acrylic
Hi-Solids Polyurethane
Macropoxy 646
Macropoxy HS
Sher-Loxane 800
Sher-Cryl HPA
Tile-Clad HS
Epoxy Mastic Aluminum II
Hi-Solids Polyurethane 250

The systems listed above are representative of the product's use, other systems may be appropriate.

## STEEL
### *PERFORMANCE TIPS*

When using spray application, use a 50% overlap with each pass of the gun to avoid holidays, bare areas, and pinholes. If necessary, cross spray at a right angle

Spreading rates are calculated on volume solids and do not include an application loss factor due to surface profile, roughness or po¬rosity of the surface, skill and technique of the applicator, method of application, various surface irregularities, material lost during mixing, spillage, overthinning, climatic conditions, and excessive film build.

No reduction of material is recommended as it can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

To avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Xylene, R2K4.

For better performance in severely corrosive environments, or over heavily rusted/pitted steel or porous concrete and masonry, two coats may be required.

Roll out any puddles.

Airless spray is acceptable for application; however, the product should be backrolled to eliminate excessive millage and puddles.

Gloss may vary depending on substrate and film thickness.


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## PRODUCT CHARACTERISTICS

| | |
|---|---|
| **Finish:** | Gloss |
| **Volume Solids:** | 96% ± 2%, mixed |
| **Weight Solids:** | 97% ± 2%, mixed |
| **VOC (Calculated):** | <50 g/L; 0.42 lb/gal, mixed |
| **Mix Ratio:** | 2 components, 3:1 ratio |
| **Pot Life, at 50% RH:** | 2 hours at 40°F/4.5°C<br>1 hour at 77°F/25°C<br>20 minutes at 100°F/38°C |
| **Sweat-in-Time:** | None required |
| **Shelf Life:** | 24 months, unopened, store indoors at 40°F (4.5°C) to 100°F (38°C) |
| **Flash Point:** | 75°F (24°C), PMCC, mixed |
| **Reducer:** | Not recommended |
| **Clean Up:** | Xylene, R2K4 |

## TINTING

Do not tint.

## APPLICATION CONDITIONS

Temperature: 40°F (4.5°C) minimum, 120°F (49°C) maximum (air, surface, and material)
At least 5°F (2.8°C) above dew point
Relative humidity: 85% maximum

## ORDERING INFORMATION

Packaging:
Part A: 3 quarts (2.8L) in a 1 gallon (3.78L) container
3 gallons (11.3L) in a 5 gallon (18.9L) container
Part B: 1 quart (0.94L) and 1 gallon (3.78L)
1 gallon (3.78L) and 4 gallons (15.1L) mixed

Weight: 9.40 ± 0.2 lb/gal ; 1.1 Kg/L, mixed

## APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Use low speed mechanical agitation to mix Part A and Part B separately, then add 1 part by volume of Part B to 3 parts by volume of Part A. Mix the combined parts using low speed power agitation for at least 5 minutes. Mixed material will generate heat and should be handled appropriately, using all material before pot life expiration, and cleaning lines and equipment immediately after use. Higher temperatures will decrease working pot life, while lower temperatures will increase it.

If reducer solvent is used, add only after both components have been thoroughly mixed.

Apply paint at the recommended film thickness and spreading rate.

Application of coating above maximum or below minimum recommended spreading rate may adversely affect coating performance.

## APPLICATION EQUIPMENT

The following is a guide. Changes in pressures and tip sizes may be needed for proper spray characteristics. Always purge spray equipment before use with listed reducer. Any reduction must be compliant with existing VOC regulations and compatible with the existing environmental and application conditions.

**Reducer** .....Not recommended
**Clean-Up** .....Xylene, R2K4

**Airless Spray***
Pressure.....2200 - 2500 psi
Hose.....1/4" ID
Tip .....015"
Filter .....60 mesh

*Airless spray is acceptable for application; however, the product should be backrolled to eliminate excessive millage and puddles

**Conventional Spray**
Gun .....Binks 95
Tip .....66
Cap .....63 PB
Atomization Pressure.....50 psi
Fluid Pressure.....10 psi

**Brush**
Brush.....High quality nylon/polyester bristle

**Roller**
Cover (for Steel).....1/4" or less woven with solvent resistant core
Cover (for Concrete) .....3/8" or more woven with solvent resistant core

If specific application equipment is not listed above, equivalent equipment may be substituted.

## CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Xylene, R2K4. Clean tools immediately after use with Xylene, R2K4. Follow manufacturer's safety recommendations when using any solvent.

## SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

Published technical data and instructions are subject to change without notice. Contact your Sherwin-Williams representative for additional technical data and instructions.

## DISCLAIMER

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Sherwin-Williams Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Sherwin-Williams representative to obtain the most recent Product Data Information and Application Bulletin.

## WARRANTY

The Sherwin-Williams Company warrants our products to be free of manufacturing defects in accord with applicable Sherwin-Williams quality control procedures. Liability for products proven defective, if any, is limited to replacement of the defective product or the refund of the purchase price paid for the defective product as determined by Sherwin-Williams. NO OTHER WARRANTY OR GUARANTEE OF ANY KIND IS MADE BY SHERWIN-WILLIAMS, EXPRESSED OR IMPLIED, STATUTORY, BY OPERATION OF LAW OR OTHERWISE, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.