

**THE SHERWIN-WILLIAMS COMPANY
LIMITED WARRANTY**

This Limited Warranty is issued by the Protective and Marine Division of The Sherwin-Williams Company ("SW") to the City of Gillette, WY ("Customer") for the Coating System applied by Customer or Customer's applicator to a Suitable Substrate located at the Project, as further described in this Limited Warranty.

1. **LIMITED WARRANTY.** If a Covered Warranty Claim occurs during the Warranty Period, SW shall reimburse Customer as follows. SW will determine the amount of paint that is necessary to repair the Covered Warranty Claim. SW will provide such paint to Customer at no cost.

2. **SCOPE OF WARRANTY.** This Limited Warranty is subject to all of the conditions set forth in Paragraph 3 of this Limited Warranty. This Limited Warranty shall not apply to any Covered Warranty Claim that is the result of any negligence by Customer, Customer's applicator, and/or any of Customer's employees, contractors, agents, vendors, suppliers, customers or guests.

3. **CONDITIONS OF WARRANTY.** SW's obligation to furnish replacement paint and to reimburse Customer for reasonable labor costs pursuant to this Limited Warranty is contingent upon the following conditions being satisfied. SW shall have no liability under this Limited Warranty or otherwise if any condition set forth in this Limited Warranty has not been satisfied by Customer or waived in writing by SW.

(a) The Coating System must be purchased by Customer or Customer's applicator directly from SW.

(b) The Coating System shall be applied by Customer or Customer's applicator to a Suitable Substrate at the Project within six (6) months after Customer and/or Customer's applicator purchases the Coating System from SW.

(c) The Coating System shall be applied in strict accordance with the Specifications.

(d) The Coating System shall be applied at the dry film thicknesses set forth in Section 8 of this Limited Warranty.

(e) Customer shall follow the Specifications in all respects with regard to storage, product handling, surface preparation, application and other requirements. If the Coating System is to be applied by Customer's applicator, Customer shall cause such applicator to follow the Specifications in all respects with regard to storage, product handling, surface preparation, application and other requirements. In the event of a conflict between the requirements set forth in the Specifications and the requirements set forth in the body of this Limited Warranty, then the requirements set forth in the body of this Limited Warranty shall govern.

(f) Customer has complete responsibility for ensuring that the application of the Coating System is in full compliance with the Specifications notwithstanding periodic visits to the Project by any representative of SW and notwithstanding any representations made by any representative of SW to the contrary.

(g) Customer and SW will conduct joint inspections of the Project on an annual basis during the Warranty Period to determine what, if any, remedial work needs to be performed at the Project and which party has the responsibility to perform said remedial work; provided, however, said annual inspections will not diminish or negate Customer's responsibility to inspect and repair a paint related failure as otherwise provided in this Limited Warranty. Customer shall be responsible for coordinating such inspections with SW.

(h) Customer shall maintain quality control and production records to assist SW in evaluating the validity of any claim made

by Customer under this Limited Warranty. The records shall be retained for the Warranty Period and for a period of three (3) years thereafter.

(i) It shall be the responsibility of Customer and/or Customer's applicator to perform repairs on any Coating System on any Coating System if a paint related problem is discovered which is not the responsibility of SW pursuant to this Limited Warranty. Such repairs shall be made by Customer or Customer's applicator and SW shall not be responsible for the expense of such repairs. All repairs of the Coating System shall be made utilizing only those products satisfactory to SW.

4. **CLAIMS.** To assert any claim under this Limited Warranty, Customer shall notify SW in writing. All claims shall be sent to: The Sherwin-Williams Company, 101 West Prospect Avenue, Cleveland, Ohio 44115, ATTENTION: Vice President of Sales - Protective and Marine Division. Each claim under this Limited Warranty:

(a) must be received by SW by the earlier of:

- i. the expiration of the Warranty Period; or
- ii. thirty (30) days after Customer has actual or constructive notice of the paint related problem upon which the claim is based;

(b) must contain:

- i. a detailed description of the paint related problem;
- ii. the dates Customer and/or Customer's applicator purchased the affected Coating System and applied the affected Coating System;
- iii. the date Customer detected the paint related problem; and
- iv. copies of Customer's quality control records relating to such claim.

(c) SW will promptly inspect the problem and make a determination, under the terms and conditions of this Limited Warranty, whether the claim is covered by this Limited Warranty and whether SW is financially responsible for providing replacement paint and labor to Customer under this Limited Warranty. Customer waives any claim not made in the manner set forth in this Paragraph 4. SW shall have a full and complete opportunity to inspect any alleged Covered Warranty Claim and review any records concerning the alleged Covered Warranty Claim.

5. **WARRANTY PERIOD APPLICABLE TO A REPAIR.**

The Warranty Period shall not be extended by the repair of any Covered Warranty Claim pursuant to this Limited Warranty. Any replacement paint furnished by SW pursuant to this Limited Warranty shall be covered by the terms of this Limited Warranty for the remaining term of the original Warranty Period, provided that such replacement paint is applied in accordance with SW's specifications and instructions.

6. **EXCLUSIVE REMEDY.**

(a) **THE LIMITED WARRANTY PROVIDED HEREIN IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, REGARDING THE QUALITY AND/OR THE PERFORMANCE OF THE COATING SYSTEM. EXCEPT AS EXPRESSLY**

PROVIDED IN THIS LIMITED WARRANTY, SW MAKES NO WARRANTIES OF ANY KIND RELATING TO THE COATING SYSTEM AND/OR THE PERFORMANCE THEREOF AND SW DISCLAIMS ALL WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTY OF MERCHANTABILITY, THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY CONTAINED ON THE CONTAINER LABEL AND/OR OTHER LITERATURE OF SW.

(b) SW'S ENTIRE LIABILITY RELATING IN ANY MANNER TO THIS LIMITED WARRANTY SHALL BE LIMITED EXCLUSIVELY TO PROVIDING REPLACEMENT PAINT FOR COVERED WARRANTY CLAIMS TO THE EXTENT PROVIDED IN THIS LIMITED WARRANTY. SW SHALL IN NO EVENT BE LIABLE TO CUSTOMER, OR TO ANY PERSON CLAIMING THROUGH CUSTOMER, WHETHER IN CONTRACT, TORT, OR STRICT PRODUCT LIABILITY, FOR INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS, LOSS OF USE, DEMURRAGE, OR PENALTIES, ARISING FROM ANY CAUSE WHATSOEVER.

(c) THIS LIMITED WARRANTY IS NOT A WARRANTY BY SW TO CUSTOMER CONCERNING THE APPLICATION OF THE COATING SYSTEM AND CUSTOMER ACKNOWLEDGES AND AGREES THAT CUSTOMER AND/OR CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING THE PROPER APPLICATION OF THE COATING SYSTEM AND IS SOLELY RESPONSIBLE FOR IMPROPER APPLICATION OF THE COATING SYSTEM.

7. **ASSIGNMENT.** This Limited Warranty may not be transferred or assigned by Customer.

8. **DEFINITIONS.** The following terms when used in this Limited Warranty shall have the meanings set forth below.

(a) "Coating System" shall mean one or more of the following:

- i. Coating System 1; or
- ii. Coating System 2.

(b) "Coating System 1" shall mean:

- i. Coating System 1 Primer; and
- ii. Coating System 1 Topcoat.

(c) "Coating System 2" shall mean:

- i. Coating System 2 Primer; and
- ii. Coating System 2 Topcoat.

(d) "Coating System 1 Primer" shall mean Sherwin-Williams Sher-Glass FF glass flake reinforced epoxy (B62R525/B62V52_) applied so that a dry film thickness of a minimum of 8.0 mils and a maximum of 15.0 mils is achieved.

(e) "Coating System 1 Topcoat" shall mean Sherwin-Williams Sher-Glass FF glass flake reinforced epoxy (B62R525/B62V52_) applied so that a dry film thickness of a minimum of 8.0 mils and a maximum of 15.0 mils is achieved.

(f) "Coating System 2 Primer" shall mean Sherwin-Williams Macropoxy® 646 Fast Cure Epoxy (B58W610 Series/B58V600) applied so that a dry film thickness of a minimum of 4.0 and a maximum of 6.0 mils is achieved.

(g) "Coating System 2 Topcoat" shall mean Sherwin-Williams Hi-Solids Polyurethane Gloss (B65_300 Series/B60V30) applied so that a dry film thickness of a minimum of 3.0 mils and a maximum of 4.0 mils is achieved.

(h) "Corrosion" shall mean corrosion of the Coating System at a rating of less than 7, as measured in accordance with ASTM D610-08 and SSPC VIS-2.

(i) "Covered Warranty Claim" shall mean a contiguous area of five percent (5%) or more per year, on a cumulative basis, of the Coating System that exhibits the following paint-related problems:

- i. Flaking;
- ii. Corrosion; or
- iii. Loss of Adhesion.

Covered Warranty Claim does not include any other type of paint-related problem, defect or damage including but not limited to any damage or defect caused by:

- (1) the failure of Customer and/or Customer's applicator to follow and adhere to the Specifications;
- (2) improper surface preparation;
- (3) improper application of the Coating System;
- (4) improper film thickness of the Coating System;
- (5) failure to properly maintain the coated Suitable Substrate in accordance with reasonable and customary maintenance procedures;
- (6) improper drainage or run off;
- (7) design, construction or structural defects or imperfection in any Suitable Substrate and/or structural settling or movement;
- (8) damage to the Suitable Substrate that causes paint film dislocation or rupture, or in any other way changes the configuration or continuity of the Suitable Substrate;
- (9) the use or application of any patches, fillers, undercoats or topcoats not recommended and supplied by SW, whether applied prior to, concurrently with or after the application of the Coating System;
- (10) improper repair;
- (11) causes unrelated to the performance of the Coating System under normal operating conditions;
- (12) abrasion, scratches, chipping or mechanical damage;
- (13) staining, rust staining or bleeding resulting from rusting of ungalvanized bolts;
- (14) any defect occurring on hidden surfaces or at connections which cannot feasibly be painted;
- (15) exposure to harmful solids and/or chemicals;
- (16) exposure to abnormal conditions including, without limitation, corrosive or aggressive atmospheres such as those contaminated with chemical fumes;
- (17) improper installation of the Suitable Substrate;
- (18) failure of any coating that was applied on the Suitable Substrate prior to or after the Coating System;
- (19) damage caused by any person or entity other than SW; and/or
- (20) causes beyond the reasonable control of SW including, not limited to, damage or defects caused in whole or in part by reason of fire, explosion, flood, war, riots, civil commotion, radiation, act of God, unusual weather conditions (including, but not limited to, hurricane, tornado and/or earthquake), falling objects, external forces, matters normally covered by force majeure, misuse, alteration, abuse, vandalism, negligence, or any other similar or dissimilar

circumstance or event beyond the reasonable control of SW.

(j) "Flaking" shall mean flaking of the Coating System at a rating of less than or equal to No. 4, as measured in accordance with ASTM D772-86.

(k) "Loss of Adhesion" shall mean a loss of adhesion of the Coating System from the Suitable Substrate at a rating of less than or equal to 4, as measured in accordance with ASTM D6677-07.

(l) "Project" shall mean shall mean:

- i. application of Coating System 1 to interior Suitable Substrate; and
- ii. application of Coating System 2 to exterior Suitable Substrate.

all with respect to the existing aeration basin and final clarifier of the waste water treatment facility located at 3101 S. Garner Lake Road, Gillette, WY 82716.

(m) "Project Completion Date" shall mean June 30, 2015.

(n) "Specifications" shall mean the process specifications that are set forth on Appendix A, which is attached hereto and incorporated herein by reference.

THE SHERWIN-WILLIAMS COMPANY

By: _____
Name: Todd Stephenson
Title: Vice President - Protective and Marine Division
Date: _____

(o) "Suitable Substrate" shall mean properly prepared Carbon Steel that is installed at the Project.

(p) "Warranty Period" means the ten (10) year period commencing on the Project Completion Date.

9. **APPLICABLE LAW; JURISDICTION.** This Limited Warranty shall be governed by and construed in accordance with the internal laws of the State of Ohio without regard to the principles of conflicts of laws.

10. **ENTIRE AGREEMENT.** This Limited Warranty constitutes the entire agreement between SW and Customer concerning the subject matter hereof and supersedes all prior or contemporaneous agreements or warranties between the parties concerning the subject matter hereof. This Limited Warranty shall not be binding upon SW unless it is signed by Customer and by a Vice President of SW.

CITY OF GILLETTE, WY

By: _____
Name: _____
Title: _____
Date: _____

APPENDIX A
SPECIFICATIONS



Protective & Marine Coatings

SHER-GLASS FF GLASS FLAKE REINFORCED EPOXY

PART A
PART B
PART B

B62-525
B62V525
B62V526

SERIES
STANDARD HARDENER
LOW TEMP HARDENER

Revised: March 6, 2014

PRODUCT INFORMATION

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PRODUCT DESCRIPTION

SHER-GLASS FF is a glass flake reinforced amine epoxy coating formulated for immersion service or where steel or concrete protection is desired, in a wide range of harsh industrial environments.

- The use of pre-wetted glass flake allows for consistent mixing and application
- Re-inforced film enhances performance and edge protection
- Excellent immersion service performance
- Corrosion, impact, abrasion resistant
- Direct to metal application for tanks and structural steel
- Up to 20.0 mils (500 microns) dry in a single coat

PRODUCT CHARACTERISTICS

| | |
|-----------------------------|--|
| Finish: | Semi-Gloss |
| Color: | Red Oxide, Black, Haze Gray, White OAP |
| Volume Solids: | 76% ± 2% mixed, (calculated) |
| Weight Solids: | 87% ± 2% mixed, (calculated) |
| Mix Ratio: | 4:1 (2 components) |
| VOC (EPA Method 24): | Unreduced: <250 g/L; 2.08 lb/gal (mixed) 10% Reduced: <276 g/L; 2.30 lb/gal |

Recommended Spreading Rate per coat:

| | Minimum | Maximum |
|--|--------------------|-------------------|
| Wet mils (microns) | 10.0 (250) | 26.0 (625) |
| Dry mils (microns) | 8.0 (200) | 20.0 (500) |
| ~Coverage sq ft/gal (m²/L) | 61 (1.5) | 152 (3.7) |
| Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft | 1216 (29.8) | |

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 15.0 mils wet (375 microns):

| With B62V525 | @ 55°F/13°C | @ 77°F/25°C 50% RH | @ 120°F/49°C |
|---|---|-----------------------|--------------|
| To touch: | 7 hours | 4 hours | 80 minutes |
| To handle: | 9 hours | 4.5 hours | 90 minutes |
| To recoat: | | | |
| minimum: | 48 hours | 18 hours | 4 hours |
| maximum: | 60 days | 60 days | 45 days |
| To cure: | 14 days | 7 days | 3 days |
| Heat Cure: | 8 hours @ ambient, then 16 hours @ 140°F (60°C) | | |
| If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. | | | |
| Pot Life: | 4 hours | 2 hours | 30 minutes |
| Sweat-in-time: | 30 minutes | 15 minutes | none |

Drying Schedule @ 15.0 mils wet (375 microns):

| With B62V526* | @ 40°F/4.5°C | @ 77°F/25°C 50% RH |
|---|---|-----------------------|
| To touch: | 24 hours | 2 hours |
| To handle: | 48 hours | 2.5 hours |
| To recoat: | | |
| minimum: | 48 hours | 8 hours |
| maximum: | 30 days | 14 days |
| To cure: | 10 days | 5 days |
| Heat Cure: | 8 hours @ ambient, then 16 hours @ 140°F (60°C) | |
| If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. | | |
| Pot Life: | 2 hours | 30 minutes |
| Sweat-in-Time: | 10 minutes | none |

*Do not use Sher-Glass Low Temp Hardener above 80°F (27°C)

PRODUCT CHARACTERISTICS (Cont'd)

| | |
|--------------------------|--|
| Shelf Life: | Part A: 24 months Part B: 36 months Store indoors at 40°F (4.5°C) to 100°F (38°C). |
| Flash Point: | 80°F (27°C), PMCC, mixed |
| Reducer/Clean Up: | Xylene R2K4, or R7K100 |

RECOMMENDED USES

For use over prepared steel or concrete in the following environments:

- Petro-chemical and power plants
- Immersion in fresh or salt water
- Water and waste water facilities
- Marine - ships, barges, and offshore structures
- High humidity and moisture areas
- Areas requiring good chemical resistance to splash, spillage, and fumes
- Acceptable for use in areas of high H₂S
- Acceptable for use with cathodic protection systems

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

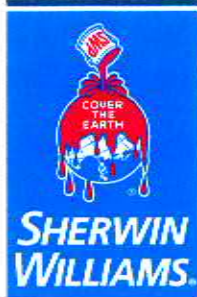
Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

1 ct. Sher-Glass FF @ 15.0 mils (375 microns) w/ Standard Hardener
*unless otherwise noted below

| Test Name | Test Method | Results |
|---|---|---|
| Adhesion | ASTM D4541, Patti Tester | 1100 psi |
| Corrosion Weathering Resistance | ASTM D5894, 12 cycles, 4032 hours | Rating 10 per ASTM D714 for Blistering; Rating 10 per ASTM D610 for Rusting |
| Direct Impact Resistance | ASTM D2794 | 32 in. lbs. |
| Dry Heat Resistance | ASTM D2485, Method A, Water Quench Test | 400°F (204°C) (discolors) |
| Flexibility | ASTM D522 | 6% elongation - Passes 3/4 inch mandrel |
| Moisture Condensation Resistance | ASTM D4585, 100°F (38°C), 4200 hours | Rating 10 per ASTM D714 for Blistering; Rating 10 per ASTM D610 for Rusting |
| Pencil Hardness | ASTM D3363 | 3H |
| Salt Fog Resistance | ASTM B117, 4200 hours | Rating 10 per ASTM D714 for Blistering; Rating 10 per ASTM D610 for Rusting |

Epoxy coatings may darken or yellow following application and curing.



Protective & Marine Coatings

SHER-GLASS FF GLASS FLAKE REINFORCED EPOXY

PART A
PART B
PART B

B62-525
B62V525
B62V526

SERIES
STANDARD HARDENER
LOW TEMP HARDENER

Revised: March 6, 2014

PRODUCT INFORMATION

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RECOMMENDED SYSTEMS

| | | Dry Film Thickness / ct. | |
|---------------------------------|--|--------------------------|-----------|
| | | Mils | (Microns) |
| Immersion Service: | | | |
| Steel: | | | |
| 1 ct. | Sher-Glass FF | 16.0-20.0 | (400-500) |
| or | | | |
| 2 cts. | Sher-Glass FF per coat | 8.0-20.0 | (200-500) |
| 2 cts. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| or | | | |
| 1 ct. | Dura-Plate 235 | 4.0-8.0 | (100-200) |
| 1 ct. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| or | | | |
| 1 ct. | Copoxy Shop Primer | 3.0-5.0 | (75-125) |
| 1 ct. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| Concrete (Smooth): | | | |
| 1 ct. | Corobond 100 | 4.0-6.0 | (100-150) |
| 2 cts. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| Concrete (Rough): | | | |
| 1 ct. | Steel-Seam FT910, as required to fill voids and provide a continuous substrate, up to 1".* | | |
| 2 cts. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| Atmospheric Service: | | | |
| Steel: | | | |
| 1-2 cts. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| or | | | |
| 1 ct. | Dura-Plate 235 | 4.0-8.0 | (100-200) |
| 1 ct. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| or | | | |
| 1 ct. | Copoxy Shop Primer | 3.0-5.0 | (75-125) |
| 1 ct. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| Steel, Urethane topcoat: | | | |
| 1ct. | Sher-Glass FF | 8.0-20.0 | (200-500) |
| 1 ct. | Acrolon 218 HS Polyurethane | 3.0-6.0 | (75-150) |

*Kem Cati-Coat Epoxy Filler/Sealer may also be acceptable.

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

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.

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.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

| | | |
|--------------------------------|---|--|
| Iron & Steel: | | |
| Atmospheric: | SSPC-SP12/NACE 5, WJ-4 (with existing profile) or SSPC-SP3 or SSPC-SP2 | |
| Immersion: | SSPC-SP10/NACE 2, 2-3 mil (50-75 micron) profile or SSPC-SP12/NACE 5, WJ-2/SC-2 (with existing profile) | |
| Concrete & Masonry: | | |
| Atmospheric: | SSPC-SP13/NACE 6, or ICRI No. 310.2, CSP 1-3 | |
| Immersion: | SSPC-SP13/NACE 6, 6-4.3.1 or 4.3.2, or ICRI No. 310.2, CSP 1-3 | |

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 | C St 2 | C St 2 | SP 2 | - |
| Rusted | D St 2 | D St 2 | SP 3 | - |
| Pitted & Rusted | D St 3 | D St 3 | SP 3 | - |
| Rusted | C St 3 | C St 3 | SP 3 | - |
| Power Tool Cleaning | D St 3 | D St 3 | SP 3 | - |
| Pitted & Rusted | D St 3 | D St 3 | SP 3 | - |

TINTING

Do not tint.

APPLICATION CONDITIONS

| | | |
|---------------------------------------|------------------------|--|
| Temperature: | | |
| Standard Hardener: | Air & Material Surface | 55°F (13°C) minimum 120°F (49°C) maximum |
| Low Temp Hardener: | Air & Material Surface | 40°F (4.5°C) minimum 120°F (49°C) maximum |
| At least 5°F (2.8°C) above dew point. | | |
| Relative humidity: | | 85% maximum |

Refer to product Application Bulletin for detailed application information.

Do not use low temperature hardener above 80°F (27°C)

ORDERING INFORMATION

| | |
|------------|---|
| Packaging: | 5 gallons (18.9L) mixed |
| Part A: | 4 gallons (15.1L) in a slack filled five gallon container |
| Part B: | 1 gallon (3.78L) |
| Weight: | 11.54 ± 0.3 lb/gal ; 1.4 Kg/L (mixed) |

SAFETY PRECAUTIONS

Refer to the MSDS 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.

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.



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PART A
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B62V526

SERIES
STANDARD HARDENER
LOW TEMP HARDENER

Revised: March 6, 2014

APPLICATION BULLETIN

4.37

SURFACE PREPARATIONS

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 (atmospheric service)

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Ultra High Pressure Water Jetting for Steel per SSPC-SP12/NACE 5, WJ-4 (with existing profile) or SSPC-SP3 Power Tool Clean or SSPC-SP2 Hand Tool Clean. 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 (2 mils / 50 microns). Coat any bare steel the same day as it is cleaned or before flash rusting occurs.

Iron & Steel, Immersion Service:

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10 or SSPC-SP12/NACE 2. For SSPC-SP10, blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). For SSPC-SP12/NACE 2, all surfaces to be coated shall be cleaned in accordance with WJ-2/SC-2 standards. Pre-existing profile should be approximately 2 mils (50 microns). Light rust bloom is allowed. Remove all weld spatter and round all sharp edges. Prime any bare steel the same day as it is cleaned.

Note: If blast cleaning with steel media is used, an appropriate amount of steel grit blast media may be incorporated into the work mix to render a dense, angular 2.0-3.0 mil (50-75 micron) surface profile. This method may result in improved adhesion and performance.

APPLICATION CONDITIONS

| | | |
|---------------------------------------|------------------------|--|
| Temperature: | | |
| Standard Hardener: | Air & Material Surface | 55°F (13°C) minimum 120°F (49°C) maximum |
| Low Temp Hardener: | Air & Material Surface | 40°F (4.5°C) minimum 120°F (49°C) maximum |
| At least 5°F (2.8°C) above dew point. | | |
| Relative humidity: | | 85% maximum |

Do not use low temperature hardener above 80°F (27°C)

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/Clean Up

Reducer R2K4
Use of any other solvent than xylene, R2K4 may affect the performance or compliance of this product for its intended service

Airless Spray

| | |
|----------------|-------------------------------|
| Pump..... | 45:1 minimum |
| Pressure..... | 3600 psi minimum |
| Hose..... | 3/8" ID |
| Tip..... | 0.031" - 0.041" |
| Filter..... | none |
| Reduction..... | as needed up to 10% by volume |

Conventional Spray

| | |
|---------------------------|-------------------------------|
| Gun..... | Binks 95 |
| Fluid Nozzle..... | 66 |
| Air Nozzle..... | 68 PB |
| Atomization Pressure..... | 80 psi |
| Fluid Pressure..... | 30 psi |
| Reduction..... | as needed up to 10% by volume |

Keep pressure pot at level of applicator to avoid blocking of fluid line due to weight of material. Blow back coating in fluid line at intermittent shutdowns, but continue agitation at pressure pot.

Brush

| | |
|----------------|---------------------------------|
| Brush..... | Nylon/Polyester Natural Bristle |
| Reduction..... | not recommended |

Roller

| | |
|----------------|---|
| Cover..... | 3/8"-1/2" woven with solvent resistant core |
| Reduction..... | not recommended |

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

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 | C St 2 | C St 2 | SP 2 | - |
| Pitted & Rusty | D St 2 | D St 2 | SP 2 | - |
| Rusty | C St 3 | C St 3 | SP 3 | - |
| Power Tool Cleaning | P St 3 | D St 3 | SP 3 | - |



Protective & Marine Coatings

SHER-GLASS FF GLASS FLAKE REINFORCED EPOXY

PART A
PART B
PART B

B62-525
B62V525
B62V526

SERIES
STANDARD HARDENER
LOW TEMP HARDENER

Revised: March 6, 2014

APPLICATION BULLETIN

4.37

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine 4 parts by volume of Part A with one part by volume of Part B. Thoroughly agitate the mixture with power agitation at slow speeds. Allow the material to sweat-in as indicated. Prior to use, pour through a 30-60-mesh screen and re-stir before using.

If reducer solvent is used, add only after components have been thoroughly mixed, after sweat-in.

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

| | Minimum | Maximum |
|---|-------------|------------|
| Wet mils (microns) | 10.0 (250) | 26.0 (625) |
| Dry mils (microns) | 8.0 (200) | 20.0 (500) |
| ~Coverage sq ft/gal (m ² /L) | 61 (1.5) | 152 (3.7) |
| Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft | 1216 (29.8) | |

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 15.0 mils wet (375 microns):

| | With B62V525 @ 55°F/13°C | @ 77°F/25°C 50% RH | @ 120°F/49°C |
|------------|---|--------------------|--------------|
| To touch: | 7 hours | 4 hours | 80 minutes |
| To handle: | 9 hours | 4.5 hours | 90 minutes |
| To recoat: | | | |
| minimum: | 48 hours | 18 hours | 4 hours |
| maximum: | 60 days | 60 days | 45 days |
| To cure: | 14 days | 7 days | 3 days |
| Heat Cure: | 8 hours @ ambient, then 16 hours @ 140°F (60°C) | | |

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.

| | | | |
|----------------|------------|------------|------------|
| Pot Life: | 4 hours | 2 hours | 30 minutes |
| Sweat-in-time: | 30 minutes | 15 minutes | none |

Drying Schedule @ 15.0 mils wet (375 microns):

| | With B62V526* @ 40°F/4.5°C | @ 77°F/25°C 50% RH |
|------------|---|--------------------|
| To touch: | 24 hours | 2 hours |
| To handle: | 48 hours | 2.5 hours |
| To recoat: | | |
| minimum: | 48 hours | 8 hours |
| maximum: | 30 days | 14 days |
| To cure: | 10 days | 5 days |
| Heat Cure: | 8 hours @ ambient, then 16 hours @ 140°F (60°C) | |

If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.

| | | |
|----------------|------------|------------|
| Pot Life: | 2 hours | 30 minutes |
| Sweat-in-Time: | 10 minutes | none |

*Do not use Sher-Glass Low Temp Hardener above 80°F (27°C)

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

PERFORMANCE TIPS

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

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.

Excessive reduction of material can affect film build, appearance and adhesion.

Excessive film build, poor ventilation, and cool temperatures may cause solvent entrapment and premature coating failure.

For Immersion Service: (if required) Holiday test in accordance with ASTM D5162 for steel, or ASTM D4787 for concrete.

Do not mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

Do not use the Low Temp Hardener above 80°F (27°C)

Refer to Product Information sheet for additional performance characteristics and properties.

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with R2K4, or R7K100. Clean tools immediately after use with R2K4, or R7K100. Follow manufacturer's safety recommendations when using any solvent.

DISCLAIMER

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SAFETY PRECAUTIONS

Refer to the MSDS 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.

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.



Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A
PART B

B58-600
B58V600

SERIES
HARDENER

Revised: Sept. 29, 2015

PRODUCT INFORMATION

4.53

PRODUCT DESCRIPTION

MACROPOXY 646 FAST CURE EPOXY is a high solids, high build, fast drying, polyamide epoxy designed to protect steel and concrete in industrial exposures. Ideal for maintenance painting and fabrication shop applications. The high solids content ensures adequate protection of sharp edges, corners, and welds. This product can be applied directly to marginally prepared steel surfaces.

- Low VOC
- Low odor
- Outstanding application properties
- Meets Class A requirements for Slip Coefficient, 0.36 @ 6 mils / 150 microns dft (Mill White only)
- Chemical resistant
- Abrasion resistant

PRODUCT CHARACTERISTICS

| | |
|-----------------------------|---|
| Finish: | Semi-Gloss |
| Color: | Mill White, Black and a wide range of colors available through tinting |
| Volume Solids: | 72% ± 2%, mixed, Mill White |
| Weight Solids: | 85% ± 2%, mixed, Mill White |
| VOC (EPA Method 24): | Unreduced: <250 g/L; 2.08 lb/gal mixed Reduced 10%: <300 g/L; 2.50 lb/gal |
| Mix Ratio: | 1:1 by volume |

Recommended Spreading Rate per coat:

| | Minimum | Maximum |
|--|--------------------|--------------------|
| Wet mils (microns) | 7.0 (175) | 13.5 (338) |
| Dry mils (microns) | 5.0* (125) | 10.0* (250) |
| ~Coverage sq ft/gal (m²/L) | 116 (2.8) | 232 (5.7) |
| Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft | 1152 (28.2) | |

*May be applied at 3.0-10.0 mils (75-250 microns) dft as an intermediate coat in a multi-coat system. Refer to Recommended Systems (page 2). See Performance Tips section also.

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 7.0 mils wet (175 microns):

| | @ 35°F/1.7°C | @ 77°F/25°C | @ 100°F/38°C |
|---|--------------|---------------|--------------|
| | | 50% RH | |
| To touch: | 4-5 hours | 2 hours | 1.5 hours |
| To handle: | 48 hours | 8 hours | 4.5 hours |
| To recoat: | | | |
| minimum: | 48 hours | 8 hours | 4.5 hours |
| maximum: | 1 year | 1 year | 1 year |
| To cure: | | | |
| Service: | 10 days | 7 days | 4 days |
| Immersion: | 14 days | 7 days | 4 days |
| If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent. Paint temperature must be at least 40°F (4.5°C) minimum. | | | |
| Pot Life: | 10 hours | 4 hours | 2 hours |
| Sweat-in-time: | 30 minutes | 30 minutes | 15 minutes |

When used as an intermediate coat as part of a multi-coat system:

Drying Schedule @ 5.0 mils wet (125 microns):

| | @ 35°F/1.7°C | @ 77°F/25°C | @ 100°F/38°C |
|-------------------|--------------|---------------|--------------|
| | | 50% RH | |
| To touch: | 3 hours | 1 hour | 1 hour |
| To handle: | 48 hours | 4 hours | 2 hours |
| To recoat: | | | |
| minimum: | 16 hours | 4 hours | 2 hours |
| maximum: | 1 year | 1 year | 1 year |

PRODUCT CHARACTERISTICS (CONT'D)

| | |
|--------------------------|---|
| Shelf Life: | 36 months, unopened Store indoors at 40°F (4.5°C) to 110°F (43°C). |
| Flash Point: | 91°F (33°C), TCC, mixed |
| Reducer/Clean Up: | Reducer, R7K15 |
| In California: | Reducer R7K111 or Oxsol 100 |

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

1 ct. Macropoxy 646 Fast Cure @ 6.0 mils (150 microns) dft

*unless otherwise noted below

| Test Name | Test Method | Results |
|---|---|---|
| Abrasion Resistance | ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load | 84 mg loss |
| Accelerated Weathering-QUV¹ | ASTM D4587, QUV-A, 12,000 hours | Passes |
| Adhesion | ASTM D4541 | 1,037 psi |
| Corrosion Weathering¹ | ASTM D5894, 36 cycles, 12,000 hours | Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 per rusting |
| Nuclear Decontamination | ASTM D4256/ANSI N 5.12 | 99% Water Wash; 95% Overall |
| Direct Impact Resistance² | ASTM D2794 | 120 in. lb. |
| Dry Heat Resistance | ASTM D2485 | 250°F (121°C) |
| Exterior Durability | 1 year at 45° South | Excellent, chalks |
| Flexibility | ASTM D522, 180° bend, 3/4" mandrel | Passes |
| Fuel Contribution | NFPA 259 | 5764 btu/lb |
| Humidity Resistance | ASTM D4585, 6000 hours | No blistering, cracking, or rusting |
| Immersion | 1 year fresh and salt water | Passes, no rusting, blistering, or loss of adhesion |
| Radiation Tolerance | ASTM D4082 / ANSI 5.12 | Pass at 21 mils (525 microns) |
| Pencil Hardness | ASTM D3363 | 3H |
| Salt Fog Resistance¹ | ASTM B117, 6,500 hours | Rating 10 per ASTM D610 for rusting; Rating 9 per ASTM D1654 for corrosion |
| Slip Coefficient, Mill White³ | AISC Specification for Structural Joints Using ASTM A325 or ASTM A490 Bolts | Class A, 0.36 |
| Surface Burning | ASTM E84/NFPA 255 | Flame Spread Index 20; Smoke Development Index 35 (at 18 mils or 450 microns) |
| Water Vapor Permeance | ASTM D1653, Method B | 1.16 US perms |

Epoxy coatings may darken or discolor following application and curing.

*Refer to Slip Certification document

¹Footnotes:

²Zinc Clad II Plus Primer

³Two coats of Macropoxy 646 Fast Cure Epoxy

DISCLAIMER

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Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A
PART B

B58-600
B58V600

SERIES
HARDENER

Revised: Sept. 29, 2015

PRODUCT INFORMATION

4.53

RECOMMENDED USES

- Marine applications
- Fabrication shops
- Pulp and paper mills
- Power plants
- Offshore platforms
- Nuclear Power Plants
- Nuclear fabrication shops
- Mill White and Black are acceptable for immersion use for salt water and fresh water, not acceptable for potable water
- Suitable for use in USDA inspected facilities
- Acceptable for use in Canadian Food Processing facilities, categories: D1, D2, D3 (Confirm acceptance of specific part numbers/recipes with your SW Sales Representative)
- Conforms to AWWA D102 OCS #5
- Conforms to MPI # 108
- This product meets specific design requirements for non-safety related nuclear plant applications in Level II, III and Balance of Plant, and DOE nuclear facilities*.
- * Nuclear qualifications are NRC license specific to the facility.
- Suitable for use in the Mining & Minerals Industry
- Acceptable for use over and/or under Loxon S1 and Loxon H1 Caulking
- Refineries
- Chemical plants
- Tank exteriors
- Water treatment plants
- DOE Nuclear Fuel Facilities
- DOE Nuclear Weapons Facilities

RECOMMENDED SYSTEMS

| | | Dry Film Thickness / ct. | |
|---|---|--------------------------|-----------|
| | | Mils | (Microns) |
| Immersion and atmospheric: | | | |
| Steel: | | | |
| 2 cts. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| Concrete/Masonry, smooth: | | | |
| 2 cts. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| Concrete Block: | | | |
| 1 ct. | Kem Cati-Coat HS Epoxy Filler/Sealer | 10.0-20.0 | (250-500) |
| | as needed to fill voids and provide a continuous substrate. | | |
| 2 cts. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| Atmospheric: | | | |
| Steel: | | | |
| (Shop applied system, new construction, AWWA D102, can also be used at 3 mils / 75 microns minimum df when used as an intermediate coat as part of a multi-coat system) | | | |
| 1 ct. | Macropoxy 646 Fast Cure Epoxy | 3.0-6.0 | (75-150) |
| 1-2 cts. | of recommended topcoat | | |
| Steel: | | | |
| 1 ct. | Recoat Epoxy Primer | 4.0-6.0 | (100-150) |
| 2 cts. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| Steel: | | | |
| 1 ct. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| 1-2 cts. | Acrolon 218 Polyurethane | 3.0-6.0 | (75-150) |
| or | Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| or | SherThane 2K Urethane | 2.0-4.0 | (50-100) |
| or | Hydrogloss | 2.0-4.0 | (50-100) |
| Steel: | | | |
| 2 cts. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| 1-2 cts. | Tile-Clad HS Epoxy | 2.5-4.0 | (63-100) |
| Steel: | | | |
| 1 ct. | Zinc Clad II Plus | 2.0-4.0 | (50-100) |
| 1 ct. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| 1-2 cts. | Acrolon 218 Polyurethane | 3.0-6.0 | (75-150) |
| Steel: | | | |
| 1 ct. | Zinc Clad III HS | 3.0-5.0 | (75-125) |
| or | Zinc Clad IV | 3.0-5.0 | (75-125) |
| 1 ct. | Macropoxy 646 Fast Cure Epoxy | 3.0-10.0 | (75-250) |
| 1-2 cts. | Acrolon 218 Polyurethane | 3.0-6.0 | (75-150) |
| Aluminum: | | | |
| 2 cts. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| Galvanizing: | | | |
| 2 cts. | Macropoxy 646 Fast Cure Epoxy | 5.0-10.0 | (125-250) |
| FIRETEX M89/02, M90, M90/02, and M93/02: | | | |
| Steel & Galvanized Substrates being primed for FIRETEX only: | | | |
| 1 ct. | Macropoxy 646 Fast Cure Epoxy | 2.0-5.0 | (50-125) |

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

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.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

| | |
|--------------------|---|
| Iron & Steel | |
| Atmospheric: | SSPC-SP2/3 |
| Immersion: | SSPC-SP10/NACE 2, 2-3 mil (50-75 micron) profile |
| Aluminum: | SSPC-SP1 |
| Galvanizing: | SSPC-SP1; See Surface Preparations section on page 3 for application of FIRETEX intumescent coating systems |
| Concrete & Masonry | |
| Atmospheric: | SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3 |
| Immersion: | SSPC-SP13/NACE 6-4.3.1 or 4.3.2, or ICRI No. 310.2R, CSP 2-4 |

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 | C St 2 | C St 2 | SP 2 | - |
| Rusted | D St 2 | D St 2 | SP 3 | - |
| Pitted & Rusted | C St 3 | C St 3 | SP 3 | - |
| Rusted | D St 3 | D St 3 | SP 3 | - |
| Power Tool Cleaning | D St 3 | D St 3 | SP 3 | - |
| Pitted & Rusted | D St 3 | D St 3 | SP 3 | - |

TINTING

Tint: Part A with Maxitones at 150% strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

Tinting is not recommended for immersion service.

APPLICATION CONDITIONS

| | |
|--------------------|---|
| Temperature: | 35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (material) At least 5°F (2.8°C) above dew point |
| Relative humidity: | 85% maximum |

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

| | |
|------------|---|
| Packaging: | |
| Part A: | 1 gallon (3.78L) and 5 gallon (18.9L) containers |
| Part B: | 1 gallon (3.78L) and 5 gallon (18.9L) containers |
| Weight: | 12.9 ± 0.2 lb/gal ; 1.55 Kg/L mixed, may vary by color |

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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WARRANTY

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Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A
PART B

B58-600
B58V600

SERIES
HARDENER

Revised: Sept. 29, 2015

APPLICATION BULLETIN

4.53

SURFACE PREPARATIONS

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, Atmospheric Service:

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 (2 mils / 50 microns). Prime any bare steel within 8 hours or before flash rusting occurs.

Iron & Steel, Immersion Service:

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2-3 mils / 50-75 microns). Remove all weld spatter and round all sharp edges by grinding. Prime any bare steel the same day as it is cleaned.

Aluminum

Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1.

Galvanized Steel

Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1 (recommended solvent is VM&P Naphtha). When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned. In preparing galvanized steel substrates for the application of FIRE-TEX intumescent coating systems, Surface Preparation Specification SSPC-SP 16 must be followed obtaining a surface profile of minimum 1.5 mils (38 microns). Optimum surface profile will not exceed 2.0 mils (50 microns).

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 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 Steel-Seam FT910.

Concrete, Immersion Service:

For surface preparation, refer to SSPC-SP13/NACE 6, Section 4.3.1 or 1.3.2 or ICRI No. 310.2R, CSP 2-4.

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.

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 product 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 16 | 3 |
| Brush-Off Blast | Sa 1 | Sa 1 | SP 1 | 4 |
| Hand Tool Cleaning | CSa 2 | CSa 2 | SP 2 | - |
| Pitted & Rusted | CSa 2 | CSa 2 | SP 2 | - |
| Rusted | CSa 3 | CSa 3 | SP 3 | - |
| Power Tool Cleaning | CSa 3 | CSa 3 | SP 3 | - |
| Pitted & Rusted | CSa 3 | CSa 3 | SP 3 | - |

APPLICATION CONDITIONS

| | |
|--------------------|---|
| Temperature: | 35°F (1.7°C) minimum, 120°F (49°C) maximum (air and surface) 40°F (4.5°C) minimum, 120°F (49°C) maximum (material) At least 5°F (2.8°C) above dew point |
| Relative humidity: | 85% maximum |

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/Clean Up Reducer R7K15
In California..... Reducer R7K111

Airless Spray

| | |
|----------------|-------------------------------|
| Pump..... | 30:1 |
| Pressure..... | 2800 - 3000 psi |
| Hose..... | 1/4" ID |
| Tip | .017" - .023" |
| Filter | 60 mesh |
| Reduction..... | As needed up to 10% by volume |

Conventional Spray

| | |
|--------------------------------------|-------------------------------|
| Gun | DeVilbiss MBC-510 |
| Fluid Tip | E |
| Air Nozzle..... | 704 |
| Atomization Pressure..... | 60-65 psi |
| Fluid Pressure..... | 10-20 psi |
| Reduction..... | As needed up to 10% by volume |
| Requires oil and moisture separators | |

Brush

| | |
|----------------|------------------------------------|
| Brush..... | Nylon/Polyester or Natural Bristle |
| Reduction..... | As needed up to 10% by volume |

Roller

| | |
|----------------|--|
| Cover | 3/8" woven with solvent resistant core |
| Reduction..... | As needed up to 10% by volume |

Plural Component Spray...Acceptable

Refer to April 2010 Technical Bulletin - "Application Guidelines for Macropoxy 646 Fast Cure Epoxy & Recoatable Epoxy Primer Utilizing Plural Component Equipment"
If specific application equipment is not listed above, equivalent equipment may be substituted.



Protective & Marine Coatings

MACROPOXY® 646 FAST CURE EPOXY

PART A
PART B

B58-600
B58V600

SERIES
HARDENER

Revised: Sept. 29, 2015

APPLICATION BULLETIN

4.53

APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine one part by volume of Part A with one part by volume of Part B. Thoroughly agitate the mixture with power agitation. Allow the material to sweat-in as indicated prior to application. Re-stir before using.

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

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

| | Minimum | Maximum |
|---|-------------|-------------|
| Wet mils (microns) | 7.0 (175) | 13.5 (338) |
| Dry mils (microns) | 5.0* (125) | 10.0* (250) |
| ~Coverage sq ft/gal (m ² /L) | 116 (2.8) | 232 (5.7) |
| Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft | 1152 (28.2) | |

*May be applied at 3.0-10.0 mils (75-250 microns) dft in atmospheric conditions. Refer to Recommended Systems (page 2). See Performance Tips section also.

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 7.0 mils wet (175 microns):

| | @ 35°F/1.7°C | @ 77°F/25°C 50% RH | @ 100°F/38°C |
|------------|--------------|-----------------------|--------------|
| To touch: | 4-5 hours | 2 hours | 1.5 hours |
| To handle: | 48 hours | 8 hours | 4.5 hours |
| To recoat: | | | |
| minimum: | 48 hours | 8 hours | 4.5 hours |
| maximum: | 1 year | 1 year | 1 year |
| To cure: | | | |
| Service: | 10 days | 7 days | 4 days |
| Immersion: | 14 days | 7 days | 4 days |

If maximum recoat time is exceeded, abrade surface before recoating.

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

Paint temperature must be at least 40°F (4.5°C) minimum.

| | | | |
|----------------|------------|------------|------------|
| Pot Life: | 10 hours | 4 hours | 2 hours |
| Sweat-in-time: | 30 minutes | 30 minutes | 15 minutes |

When used as an intermediate coat as part of a multi-coat system:

Drying Schedule @ 5.0 mils wet (125 microns):

| | @ 35°F/1.7°C | @ 77°F/25°C 50% RH | @ 100°F/38°C |
|------------|--------------|-----------------------|--------------|
| To touch: | 3 hours | 1 hour | 1 hour |
| To handle: | 48 hours | 4 hours | 2 hours |
| To recoat: | | | |
| minimum: | 16 hours | 4 hours | 2 hours |
| maximum: | 1 year | 1 year | 1 year |

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

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer R7K15. Clean tools immediately after use with Reducer R7K15. In California use Reducer R7K111. Follow manufacturer's safety recommendations when using any solvent.

PERFORMANCE TIPS

Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

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.

Excessive reduction of material can affect film build, appearance, and adhesion.

Do not mix previously catalyzed material with new.

Do not apply the material beyond recommended pot life.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer R7K15. In California use Reducer R7K111.

Tinting is not recommended for immersion service.

Use only Mill White and Black for immersion service.

Insufficient ventilation, incomplete mixing, miscatalyzation, and external heaters may cause premature yellowing.

Excessive film build, poor ventilation, and cool temperatures may cause solvent entrapment and premature coating failure.

Quik-Kick Epoxy Accelerator is acceptable for use. See data page 4.99 for details.

When coating over aluminum and galvanizing, recommended dft is 2-4 mils (50-100 microns).

Acceptable for Concrete Floors.

Can be used as a metalizing sealer. Consult Technical Bulletin - Sealers for Thermal Spray Metalizing, or your local Sherwin-Williams representative.

Refer to Product Information sheet for additional performance characteristics and properties.

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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WARRANTY

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Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

PART S B65-300
PART S B65-350
PART S B65WW305
PART T B60V30

GLOSS SERIES
SEMI-GLOSS SERIES
MR, WHITE TINT BASE (GLOSS)
HARDENER

Revised: June 1, 2015

PRODUCT INFORMATION

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PRODUCT DESCRIPTION

HI-SOLIDS POLYURETHANE is a two-component, low VOC, aliphatic, acrylic polyurethane resin coating. It is designed for high performance protection with outstanding exterior gloss and color retention.

- Good/excellent resistance to corrosion and weathering
- Outstanding color and gloss retention
- Chemical resistant
- Part of a system tested for nuclear irradiation and decontamination, Level II
- Resists film attack by mildew (MR White only)
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish: High Gloss or Semi-Gloss
Color: Wide range of colors possible
Volume Solids: 65% ± 2%, mixed, may vary by color
Weight Solids: 77% ± 2%, mixed, may vary by color
VOC (EPA Method 24): Unreduced: <340g/L; 2.80 lb/gal mixed
Reduced 15%: <370 g/L; 3.08 lb/gal
May vary by color
Mix Ratio: 4:1 by volume

Recommended Spreading Rate per coat:

| | Minimum | Maximum |
|--|--------------------|------------------|
| Wet mils (microns) | 4.5 (112) | 8.0 (200) |
| Dry mils (microns) | 3.0 (75) | 5.0 (125) |
| ~Coverage sq ft/gal (m²/L) | 208 (5.1) | 347 (8.5) |
| Theoretical coverage sq ft/gal (m²/L) @ 1 mil / 25 microns dft | 1040 (25.5) | |

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 4.5 mils wet (112 microns):

| | @ 40°F/4.5°C | @ 77°F/25°C 50% RH | @ 120°F/49°C |
|-------------------|--------------|-----------------------|--------------|
| To touch: | 4 hours | 2 hours | 1 hour |
| To handle: | 16 hours | 8 hours | 5 hours |
| To recoat: | | | |
| minimum | 24 hours | 18 hours | 10 hours |
| maximum | 14 days | 14 days | 14 days |
| To cure: | 14 days | 10 days | 7 days |
| Pot Life: | 8 hours | 4 hours | 2 hours |

Sweat-in-Time: None required

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

Shelf Life: Part S - 36 months, unopened
Part T - 24 months, unopened
Store indoors at 40°F (4.5°C) to 100°F (38°C).

Flash Point: 80°F (27°C), PMCC, mixed

Reducer/Clean Up:
Below 80°F (27°C): Reducer #69, R7K69 or R7K111
Above 80°F (27°C): Reducer #58, R7K58 or R6K32

RECOMMENDED USES

- For use over prepared substrates in industrial environments
- Heavy duty interior and exterior structural coating
- A chemical and abrasion resistant equipment and machinery finish
- A gloss and color retentive heavy duty maintenance coating for use in "high visibility" areas
- Exterior surfaces of steel tanks
- Refineries
- Clean rooms
- Chemical processing equipment
- Conveyors
- Handrails
- Marine & Offshore Applications
- Power Plants
- Resists film attack by mildew (MR White only)
- Suitable for use in USDA inspected facilities
- Acceptable for use in Canadian Food Processing facilities categories: D1, D3 (Confirm acceptance of specific part numbers/rexes with your SW Sales Representative)
- Conforms to AWWA D102 OCS #5 & #6.
- Acceptable for use in high performance architectural applications
- As topcoat for NEPCOAT System A
- Over FIRETEX hydrocarbon systems

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP6/NACE 3

System Tested*:

- 1 ct. Recoatable Epoxy Primer @ 4.0 mils (100 microns) dft
- 1 ct. Hi-Solids Polyurethane Gloss @ 3.0 mils (75 microns) dft
- *unless otherwise noted below

| Test Name | Test Method | Results |
|---|--|---|
| Abrasion Resistance | ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load | 87.1 mg loss |
| Adhesion | ASTM D4541 | 1050 psi |
| Corrosion Weathering¹ | ASTM D5894, 21 cycles, 7056 hours | Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 for rusting |
| Direct Impact Resistance | ASTM D2794 | >28 in. lbs. |
| Dry Heat Resistance | ASTM D2485 | 200°F (93°C) |
| Flexibility | ASTM D522, 180° bend, 1/8" mandrel | Passes |
| Moisture Condensation Resistance | ASTM D4585, 100°F (38°C), 1000 hours | No rusting, blistering, or delamination |
| Pencil Hardness | ASTM D3363 | F |
| Salt Fog Resistance¹ | ASTM B117, 9000 hours | Rating 10 per ASTM D714 for blistering; Rating 9 per ASTM D610 for rusting |
| Surface Burning | ASTM E84 | Flame Spread Index 0; Smoke Development Index 0 (at 3.5 mils or 88 microns) |
| Thermal Shock | ASTM D2246, 15 cycles | Excellent |

Meets the requirements of SSPC Paint No. 36, Level 3 for white and light colors. Dark colors may require a clear coat.

Footnotes:

¹ Primer: Zinc Clad II Plus; Intermediate - Recoatable Epoxy Primer



Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

| | | |
|--------|----------|-----------------------------|
| PART S | B65-300 | GLOSS SERIES |
| PART S | B65-350 | SEMI-GLOSS SERIES |
| PART S | B65WW305 | MR, WHITE TINT BASE (GLOSS) |
| PART T | B60V30 | HARDENER |

Revised: June 1, 2015

PRODUCT INFORMATION

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RECOMMENDED SYSTEMS

| | Dry Film Thickness / ct. | |
|--|--------------------------|-----------|
| | Mils | (Microns) |
| Steel: Epoxy Primer | | |
| 1 ct. Recoatable Epoxy Primer | 4.0-6.0 | (100-150) |
| 1-2 cts. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| Steel: Epoxy Primer | | |
| 1 ct. Dura-Plate 235 | 4.0-8.0 | (100-200) |
| 1-2 cts. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| Steel: Zinc Rich Primer | | |
| 1 ct. Zinc Clad II Plus | 2.0-4.0 | (50-100) |
| 1 ct. Macropoxy 646 | 5.0-10.0 | (125-250) |
| 1-2 cts. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| Steel: Epoxy Mastic Primer | | |
| 1 ct. Macropoxy 646 | 5.0-10.0 | (125-250) |
| 1-2 cts. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| Steel: Universal Primer | | |
| 1 ct. Kem Bond HS Metal | 2.0-5.0 | (50-125) |
| 1-2 cts. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| Steel: NEPCOAT | | |
| 1 ct. Zinc Clad DOT | 2.0-4.0 | (50-100) |
| 1 ct. Steel Spec Epoxy Intermediate | 3.0-6.0 | (75-150) |
| 1 ct. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| Aluminum: | | |
| 1 ct. DTM Wash Primer | 0.7-1.3 | (18-32) |
| 1-2 cts. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| Concrete: | | |
| 1 ct. Kem Cati-Coat Epoxy HS Filler/Sealer | 10.0-15.0 | (250-375) |
| 1-2 cts. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |
| Galvanized Metal: | | |
| 1 ct. Recoatable Epoxy Primer | 4.0-6.0 | (100-150) |
| 1-2 cts. Hi-Solids Polyurethane | 3.0-5.0 | (75-125) |

FIRETEX ONLY:

Finish Coat for FIRETEX Hydrocarbon Systems:

1 ct. Hi-Solids Polyurethane*

*Consult FIRETEX PFP Specialist for recommended dft range

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

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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.

Refer to product Application Bulletin for detailed surface preparation information.

Minimum recommended surface preparation:

- * Iron & Steel: SSPC-SP6/NACE 3, 2 mil (50 micron) profile
- * Aluminum: SSPC-SP1
- * Galvanizing: SSPC-SP1
- * Concrete & Masonry: SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3

* Primer Required

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 | C St 2 | C St 2 | SP 2 | - |
| Pitted & Rusty | D St 2 | D St 2 | SP 3 | - |
| Rusty | C St 3 | C St 3 | SP 3 | - |
| Power Tool Cleaning | D St 3 | D St 3 | SP 3 | - |
| Pitted & Rusty | D St 3 | D St 3 | SP 3 | - |

TINTING

Tint with Maxitoner Colorants only into Part S. Extra White tints at 200% tint strength. Ultradeep tints at 150% tint strength. Five minutes minimum mixing on a mechanical shaker is required for complete mixing of color.

APPLICATION CONDITIONS

| | |
|--------------------|--|
| Temperature: | 35°F (1.7°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 |

Refer to product Application Bulletin for detailed application information.

ORDERING INFORMATION

| | |
|------------|---|
| Packaging: | |
| Part S: | 1 gallon (3.78L) and 4 gallon (15.1L) kits |
| Part T: | quarts (0.94L) and gallons (3.78L) |
| Weight: | 10.7 ± 0.2 lb/gal ; 1.28 Kg/L mixed, may vary with color |

SAFETY PRECAUTIONS

Refer to the MSDS sheet before use.

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WARRANTY

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Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

| | | |
|--------|----------|-----------------------------|
| PART S | B65-300 | GLOSS SERIES |
| PART S | B65-350 | SEMI-GLOSS SERIES |
| PART S | B65WW305 | MR, WHITE TINT BASE (GLOSS) |
| PART T | B60V30 | HARDENER |

Revised: June 1, 2015

APPLICATION BULLETIN

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SURFACE PREPARATIONS

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

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Commercial Blast Cleaning per SSPC-SP6/NACE 3. For better performance, use Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils / 50 microns). Prime any bare steel the same day as it is cleaned or before flash rusting occurs.

Aluminum

Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1. Primer required.

Galvanized Steel

Allow to weather a minimum of six months prior to coating. Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1. When weathering is not possible, or the surface has been treated with chromates or silicates, first Solvent Clean per SSPC-SP1 and apply a test patch. Allow paint to dry at least one week before testing adhesion. If adhesion is poor, brush blasting per SSPC-SP7 is necessary to remove these treatments. Rusty galvanizing requires a minimum of Hand Tool Cleaning per SSPC-SP2, prime the area the same day as cleaned. Primer required.

Concrete and Masonry

For surface preparation, refer to SSPC-SP13/NACE 6, or ICRI No. 310.2R, CSP 1-3. Surfaces should be thoroughly clean and dry. Concrete and mortar must be cured at least 28 days @ 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 Steel-Seam FT910. Primer required.

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.

APPLICATION CONDITIONS

| | |
|--------------------|--|
| Temperature: | 35°F (1.7°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 |

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/Clean Up

| | |
|------------------------|------------------------------|
| Below 80°F (27°C)..... | Reducer #69, R7K69 or R7K111 |
| Above 80°F (27°C)..... | Reducer #58, R7K58 or R6K32 |

Airless Spray

| | |
|----------------|-------------------------------|
| Pressure..... | 2500 - 2800 psi |
| Hose..... | 3/8" ID |
| Tip..... | .013" - .017" |
| Filter..... | none |
| Reduction..... | As needed up to 10% by volume |

Conventional Spray

| | |
|---------------------------|-------------------------------|
| Gun..... | Binks 95 |
| Fluid Nozzle..... | 63 B |
| Atomization Pressure..... | 50 - 70 psi |
| Fluid Pressure..... | 20 - 25 psi |
| Reduction..... | As needed up to 15% by volume |

Brush

| | |
|----------------|-------------------------------|
| Brush..... | Natural bristle |
| Reduction..... | As needed up to 15% by volume |

Roller

| | |
|----------------|--|
| Cover..... | 3/8" woven with solvent resistant core |
| Reduction..... | As needed up to 15% by volume |

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

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 | CS St 2 | CS St 2 | SP 2 | - |
| Pitted & Rusted | DS St 2 | DS St 2 | SP 2 | - |
| Power Tool Cleaning | CS St 3 | CS St 3 | SP 3 | - |
| Pitted & Rusted | DS St 3 | DS St 3 | SP 3 | - |



Protective & Marine Coatings

HI-SOLIDS POLYURETHANE

PART S B65-300
PART S B65-350
PART S B65WW305
PART T B60V30

GLOSS SERIES
SEMI-GLOSS SERIES
MR, WHITE TINT BASE (GLOSS)
HARDENER

Revised: June 1, 2015

APPLICATION BULLETIN

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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

Mix contents of each component thoroughly with low speed power agitation. Make certain no pigment remains on the bottom of the can. Then combine 4 parts by volume of Part S with 1 part by volume of Part T. Thoroughly agitate the mixture with power agitation.

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

Apply paint at the recommended film thickness and spreading rate as indicated below:

Recommended Spreading Rate per coat:

| | Minimum | Maximum |
|---|-------------|-----------|
| Wet mils (microns) | 4.5 (112) | 8.0 (200) |
| Dry mils (microns) | 3.0 (75) | 5.0 (125) |
| ~Coverage sq ft/gal (m ² /L) | 208 (5.1) | 347 (8.5) |
| Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft | 1040 (25.5) | |

NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 4.5 mils wet (112 microns):

| | @ 40°F/4.5°C | @ 77°F/25°C 50% RH | @ 120°F/49°C |
|----------------|---------------|-----------------------|--------------|
| To touch: | 4 hours | 2 hours | 1 hour |
| To handle: | 16 hours | 8 hours | 5 hours |
| To recoat: | | | |
| minimum | 24 hours | 18 hours | 10 hours |
| maximum | 14 days | 14 days | 14 days |
| To cure: | 14 days | 10 days | 7 days |
| Pot Life: | 8 hours | 4 hours | 2 hours |
| Sweat-in-Time: | None required | | |

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

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

CLEAN UP INSTRUCTIONS

Clean spills and spatters immediately with Reducer #58, R7K58. Clean tools immediately after use with Reducer #58, R7K58. Follow manufacturer's safety recommendations when using any solvent.

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Stripe coat all crevices, welds, and sharp angles to prevent early failure in these areas.

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.

Excessive reduction of material can affect film build, appearance, and adhesion.

Do not apply the material beyond recommended pot life.

Do not mix previously catalyzed material with new.

In order to avoid blockage of spray equipment, clean equipment before use or before periods of extended downtime with Reducer #58, R7K58.

Mixed coating is sensitive to water. Use water traps in all air lines. Moisture contact can reduce pot life and affect gloss and color.

Quick-Thane Urethane Accelerator is acceptable for use. See data page 5.97 for details.

E-Z Roll Urethane Defoamer is acceptable for use. See data page 5.99 for details.

R7K69 reducer is acceptable at temperature both above and below 80°F (28°C).

Refer to Product Information sheet for additional performance characteristics and properties.

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