

CITY OF MUSKEGON
ADDENDUM NO. 02
SEAWAY BRIDGE PAINTING (SP 91914)

Pre-Bid Meeting
January 17, 2020 @ 10:00am
Public Services Building, Large Conference Room

ATTENDEES	COMPANY	EMAIL	PHONE NO.
Christy Cashin	City of Muskegon	christy.cashin@shorelinecity.com	231-724-6707
Fred Pease	City of Muskegon	fred.pease@shorelinecity.com	231-724-6707
Niko Vlahakis	Seaway Painting	niko@seawaypainting.com	248-767-3163
Kyle Workman	Sherwin-Williams	kyle.r.workman@sherwin.com	616-293-0415

CONTRACT REQUIREMENTS

1. All bids must be submitted using the bid sheet contained in the Spec Book. If you do not submit your bids by using the provided bid sheets; the city reserves the right to reject those bids.
2. It is suggested that each bidder refer to the "Bidder's Checklist" to ensure that all required information is included with the bid.
3. Bids are due Tuesday, January 28, 2020 at City Clerk's Office, City Hall, 933 Terrace St., Muskegon, MI 49440. No late bids will be accepted.
4. This is not a prevailing wage project.
5. Bid Bonds- 5% Bid Bonds must accompany your bid submittal, or 4 letters of Recommendation.
6. City Income Tax Guidelines- The successful bidder must adhere to the City Income Tax guideline, 1% for employees working and residing within the city limits and .5% for all others. The successful bidder must register with the Income Tax Department located on the first floor of city hall.
7. Local Preference Policy- If a local contractors bid is within a range of 1% or less than the lowest submitted bid, the award preference may be given to the local contractor; within the city's corporate limits.
8. Letters of Recommendation- If the total bid is \$50,000.00 or less, the bidder may submit four (4) "Letters of Recommendation" in lieu of the required contract Performance Bond. The letter intent at the time of the bid.
9. 2012 State Standard Specifications Construction Book- Please be advised that the City follows the specifications contained in this guide. These specifications will supersede any specifications found in the contract. If you have any questions regarding pay items, payments, measurements, etc., please use the latest version of the State Standard Construction Book. Except where modified in the Special Provisions.

PROJECT OVERVIEW

1. All questions should be directed to Joel Brookens (phone: 231-724-6900; email: joel.brookens@shorelinecity.com)
2. This project shall not start until April 1, 2020 and must be completed by November 15, 2020. There are some dates throughout the summer that work shall not occur, due to events in the city. Please see the Progress Clause for details.
3. MDOT and Railroad permits are required. City has been in contact with both. Both are acceptable to the project. No issues can be foreseen.
4. Sherwin Williams submitted the attached products (Epoxy Mastic Aluminum II and Acrolon 218 HS) which were reviewed and found to be equal to the specified Carbothane systems. The Sherwin Williams products are approved for use on the project as equals and must be applied per the contract specifications and the manufacturer recommendation.
5. The question was asked if vapor blasting was an acceptable option the cleaning/preparing of the bridges. As long as the vapor blasting method meets or exceeds the surface preparation standards on pages 89-92 of the contract, this is an acceptable alternative.



Protective EPOXY MASTIC ALUMINUM II

& Marine Coatings

PART A
PART B

B62S100
B60V100

ALUMINUM
HARDENER

Revised: April 2, 2019

PRODUCT INFORMATION

4.60

PRODUCT DESCRIPTION

EPOXY MASTIC ALUMINUM II is a high solids, aluminum filled, polyamine bisphenol A epoxy coating formulated to provide a high performance system over marginally prepared steel surfaces.

- Outstanding adhesion over marginally prepared surfaces
- Chemical and moisture barrier
- As a barrier or universal primer when applying high performance coatings over alkyds, to prevent lifting
- Low temperature application (35°F / 1.6°C)
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Flat
Color:	Aluminum
Volume Solids:	80% mixed, calculated ASTM D5201
Weight Solids:	89% ± 2%, mixed
VOC (EPA Method 24): mixed	Unreduced: <180 g/L; 1.50 lb/gal Reduced 10%: <235 g/L; 1.96 lb/gal
Mix Ratio:	1:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	5.0 (125)	7.5 (188)
Dry mils (microns)	4.0* (100)	6.0* (150)
~Coverage sq ft/gal (m ² /L)	214 (5.2)	320 (7.8)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1248 (30.5)	

*See Performance Tips section

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

Drying Schedule @ 7.5 mils wet (188 microns):

	@ 35°F/1.6°C	@ 50°F/10°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	20 hours	10 hours	4 hours	1 hour
Tack free:	60 hours	24 hours	8 hours	3 hours
To recoat:				
minimum:	4 days	24 hours	8 hours	3 hours
maximum:	1 year	1 year	1 year	1 year
To cure:	21 days	21 days	10 days	7 days
If maximum recoat time is exceeded, abrade surface before recoating. Drying time is temperature, humidity, and film thickness dependent.				
Pot Life:	6 hours	5 hours	3 hours	1.5 hours
Sweat-in-time:	45 minutes	30 minutes	15 minutes	10 minutes

Shelf Life:	12 months, unopened Store indoors at 40°F (4.5°C) to 100°F (38°C).
Flash Point:	102°F (39°C), PMCC, mixed
Reducer/Clean Up:	
Below 80°F (27°C):	Xylene, R2K4
Above 80°F (27°C):	Reducer #100, R7K100

RECOMMENDED USES

For use over marginally prepared substrates such as steel, aluminum, and galvanizing in industrial environments.

- Primer / topcoat for ferrous surfaces
- As a primer over rusted / pitted steel when abrasive blasting is not possible
- Where chemical and moisture resistance is needed in a high build coating
- Marine applications
- Storage tanks
- Refineries
- Conforms to AWWA D102 OCS #5

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP6/NACE 3

System Tested*:

1 ct. Epoxy Mastic Aluminum II @ 5.0 mils (125 microns) dft/ct

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	124 mg loss
Adhesion	ASTM D4541	1000+ psi
Direct Impact Resistance	ASTM D2794, 1/4" steel	160 in. lbs.
Dry Heat Resistance	ASTM D2485	200°F (93°C)
Exterior Durability	1 year at 45° South	Excellent, chalks
Flexibility	ASTM D522, 180° bend, 3/4" mandrel	Passes
Moisture Condensation Resistance	ASTM D4585, 100°F (38°C), 1500 hours	No blisters, rust, or delamination
Pencil Hardness	ASTM D3363	2H
Salt Fog Resistance	ASTM B117, 1000 hours	No blistering, cracking, softening, or delamination. No more than 1/8" rust creepage. Rating 10 per ASTM D610 for rusting.
Water Resistance	ASTM D1735, 2000 hours	No blistering, cracking, softening, or delamination. Rating 10 per ASTM D610 for rusting. Rating 10 per ASTM D714 for blistering.

Epoxy coatings may darken or yellow following application and curing.



Protective EPOXY MASTIC ALUMINUM II

& Marine Coatings

PART A **B62S100** **ALUMINUM**
PART B **B60V100** **HARDENER**

Revised: April 2, 2019

PRODUCT INFORMATION

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Steel, light/moderate service:			
1 ct.	Epoxy Mastic Aluminum II	4.0-6.0	(100-150)
Steel, severe service:			
2 cts.	Epoxy Mastic Aluminum II	4.0-6.0	(100-150)
Steel, high build epoxy topcoat:			
1 ct.	Epoxy Mastic Aluminum II	4.0-6.0	(100-150)
1-2 cts.	Tile-Clad HS Epoxy	2.5-4.0	(63-100)
Steel, acrylic latex topcoat:			
1 ct.	Epoxy Mastic Aluminum II	4.0-6.0	(100-150)
1-2 cts.	Pro Industrial DTM Acrylic Coating	2.5-4.0	(63-100)
Steel, polyurethane topcoat:			
1 ct.	Epoxy Mastic Aluminum II	4.0-6.0	(100-150)
1 ct.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Aluminum / Galvanized Metal:			
1 ct.	Epoxy Mastic Aluminum II	2.0-4.0	(50-100)

Check minimum application temperatures of primers and topcoats prior to use.

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:	SSPC-SP2
Aluminum:	SSPC-SP1
Galvanizing:	SSPC-SP1

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	Pitted & Rusty	D St 3	SP 3	-

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature:	35°F (1.6°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:	
Parts A & B:	1 gallon (3.78L) and 5 gallon (18.9L) containers
Weight:	12.99 ± 0.2 lb/gal ; 1.56 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.

DISCLAIMER

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Protective EPOXY MASTIC ALUMINUM II

& Marine Coatings

PART A B62S100 ALUMINUM
PART B B60V100 HARDENER

Revised: April 2, 2019

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

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.

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. Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning 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.

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.

APPLICATION CONDITIONS

Temperature: 35°F (1.6°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°FXylene, R2K4
Above 80°FReducer #100, R7K100

Airless Spray (use Teflon packings)

Pressure.....2800-3000 psi
Hose.....3/8" - 1/2" ID
Tip0.021"
Filter30 mesh
Reduction.....As needed up to 10% by volume

Conventional Spray

GunBinks 95
Fluid Nozzle68
Air Nozzle.....68 PB
Atomization Pressure.....55 psi
Fluid Pressure.....35 psi
Reduction.....As needed up to 10% by volume

Brush

Brush.....Nylon/Polyester or Natural Bristle
Reduction.....Not recommended

Roller

Cover3/8" - 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 & Rusted	D St 2	D St 2	SP 2	-
Rusted	C St 3	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusted D St 3	D St 3	SP 3	-



Protective EPOXY MASTIC ALUMINUM II

& Marine Coatings

PART A	B62S100	ALUMINUM
PART B	B60V100	HARDENER

Revised: April 2, 2019

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 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. 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)	5.0 (125)	7.5 (188)
Dry mils (microns)	4.0* (100)	6.0* (150)
~Coverage sq ft/gal (m ² /L)	214 (5.2)	320 (7.8)
Theoretical coverage sq ft/gal (m ² /L) @ 1 mil / 25 microns dft	1248 (30.5)	

*See Performance Tips section

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

Drying Schedule @ 7.5 mils wet (188 microns):

	@ 35°F/1.6°C	@ 50°F/10°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	20 hours	10 hours	4 hours	1 hour
Tack free:	60 hours	24 hours	8 hours	3 hours
To recoat:				
minimum:	4 days	24 hours	8 hours	3 hours
maximum:	1 year	1 year	1 year	1 year
To cure:	21 days	21 days	10 days	7 days
If maximum recoat time is exceeded, abrade surface before recoating.				
Drying time is temperature, humidity, and film thickness dependent.				
Pot Life:	6 hours	5 hours	3 hours	1.5 hours
Sweat-in-time:	45 minutes	30 minutes	15 minutes	10 minutes

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

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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.

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 Xylene, R2K4.

Do not use on sheet galvanizing.

Do not use on roofs.

Do not topcoat with alkyd or epoxy ester finishes.

Do not apply to damp surfaces.

May be applied at a relative humidity of up to 95%. Note: Condensation forming on the coating during curing may result in longer cure times, solvent entrapment, premature failure, discoloration, or a surface haze or blush that must be removed before recoating.

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

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

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A	B65-600	GLOSS SERIES
PART A	B65-650	SEMI-GLOSS SERIES
PART B	B65V600	HARDENER

Revised: April 12, 2019

PRODUCT INFORMATION

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PRODUCT DESCRIPTION

ACROLON 218 HS is a polyester modified, aliphatic, acrylic polyurethane formulated specifically for in-shop applications. Also suitable for industrial applications. A fast drying, urethane that provides color and gloss retention for exterior exposure.

- Can be used directly over organic zinc rich primers (epoxy zinc primer and moisture cure urethane zinc primer)
- Color and gloss retention for exterior exposure
- Fast dry
- Outstanding application properties

PRODUCT CHARACTERISTICS

Finish:	Gloss or Semi-Gloss
Color:	Wide range of colors available
Volume Solids:	65% ± 2%, mixed, may vary by color
Weight Solids:	78% ± 2%, mixed, may vary by color
VOC (EPA Method 24):	Unreduced: <300 g/L; 2.5 lb/gal mixed Reduced 10% with R7K15: <340 g/L; 2.8 lb/gal mixed Reduced 9% with MEK, R6K10: <340 g/L; 2.8 lb/gal
Mix Ratio:	6:1 by volume, 1 gallon or 5 gallon mixes premeasured components

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	4.5 (112.5)	9.0 (225)
Dry mils (microns)	3.0 (75)	6.0 (150)
~Coverage sq ft/gal (m²/L)	175 (4.3)	346 (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 @ 6.0 mils wet (150 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	4 hours	30 minutes	20 minutes
To handle:	18 hours	6 hours	4 hours
To recoat:			
minimum:	18 hours	8 hours	6 hours
maximum:	3 months	3 months	3 months
To cure:	14 days	7 days	5 days
Pot Life:	4 hours	2 hours	45 minutes

(reduced 5% with Reducer R7K15)

Sweat-in-Time:

None

*Drying time is temperature, humidity, and film thickness dependent.
Paint temperature must be at least 40°F (4.5°C) minimum.*

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

*Aluminum (Part A, Rex # B65SW655) has a shelf life of 24 months.

Flash Point: 55°F (13°C), Seta, mixed

Reducer/Clean Up:

Spray: Reducer R7K15, MEK R6K10, R7K111, Reducer #58
Reducer #132, Reducer #58, R7K111
Brush / Roll:

RECOMMENDED USES

Specifically formulated for in-shop applications.
For use over prepared metal and masonry surfaces in industrial environments such as:

- Structural steel
 - Rail cars and locomotives
 - Conveyors
 - Bridges
 - Wind Towers - onshore and offshore
 - Offshore platforms - exploration and production
 - Suitable for use in USDA inspected facilities
 - Conforms to AWWA D102 Outside Coating Systems #4 (OCS-4), #5 (OCS-5) & #6 (OCS-6)
 - Acceptable for use in high performance architectural applications
 - Acceptable for use over and/or under Loxon S1 and Loxon H1 Caulking
 - A component of INFINITANK
 - Over FIRETEX® hydrocarbon systems
 - Suitable for use in the Mining & Minerals Industry
- Tank exteriors
 - Pipelines
 - Ships

PERFORMANCE CHARACTERISTICS

Substrate*: Steel

Surface Preparation*: SSPC-SP10/NACE 2

System Tested*:

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

1 ct. Acrolon 218 HS Gloss @ 4.0 mils (100 microns) dft

*unless otherwise noted below

Test Name	Test Method	Results
Abrasion Resistance¹	ASTM D4060, CS17 wheel, 1000 cycles, 1 kg load	43 mg loss
Adhesion³	ASTM D4541	1976 psi
Corrosion Weathering³	ASTM D5894, 27 cycles, 9072 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering
Direct Impact Resistance¹	ASTM D2794	50 in. lb.
Dry Heat Resistance¹	ASTM D2485, Method A	200°F (93°C)
Flexibility¹	ASTM D522, 180° bend, 1/8" mandrel	Passes
Humidity Resistance²	ASTM D4585, 100°F (38°C), 1500 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering
Pencil Hardness	ASTM D3363	3H
Salt Fog Resistance³	ASTM B117, 15,000 hours	Rating 10 per ASTM D610, for rusting; Rating 10 per ASTM D714, for blistering

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

Complies with ISO 12944-5 C5I and C5M requirements.

Footnotes:

¹ Finish coat only tested

² Primer Zinc-Clad II Plus

Intermediate Macropoxy 646

Finish Acrolon 218 HS

³ Primer Zinc-Clad III HS



Protective & Marine Coatings

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A	B65-600	GLOSS SERIES
PART A	B65-650	SEMI-GLOSS SERIES
PART B	B65V600	HARDENER

Revised: April 12, 2019

PRODUCT INFORMATION

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RECOMMENDED SYSTEMS

		Dry Film Thickness / ct.	
		Mils	(Microns)
Steel:			
1 ct.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Zinc Clad II Plus	3.0-5.0	(75-125)
1 ct.	Macropoxy 646	5.0-10.0	(125-250)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Zinc Clad IV	3.0-5.0	(75-125)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Corothane I-GalvaPac Zinc Primer	3.0-4.0	(75-100)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Epoxy Mastic Aluminum II	6.0	(150)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Steel:			
1 ct.	Recoatable Epoxy Primer	4.0-6.0	(100-150)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Concrete/Masonry:			
1 ct.	Kem Cati-Coat HS Epoxy Filler/Sealer	10.0-20.0	(250-500)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)
Aluminum/Galvanizing:			
1 ct.	DTM Wash Primer	0.7-1.3	(18-32)
1-2 cts.	Acrolon 218 HS Polyurethane	3.0-6.0	(75-150)

FIRETEX ONLY:

Finish Coat for FIRETEX Hydrocarbon Systems:

1 ct. Acrolon 218 HS 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, 1-2 mil (25-50 micron) profile
- * 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 2	-
Rusty	C St 3	C St 3	SP 3	-
Power Tool Cleaning	Pitted & Rusty	D St 3	SP 3	-

TINTING

Tint Part A with Maxitoner Colorants.

- Extra white tints at 100% tint strength
- Ultradeep base 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 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:	1 gallon (3.78L) mix: 5 gallon (18.9L) mix:
Part A:	.86 gal (3.25L) 4.29 gal (16.2L)
Part B:	.14 gal (0.53L) 0.71 gal (2.7L)
(premeasured components)	

Weight: 11.2 ± 0.2 lb/gal ; 1.3 Kg/L
mixed, may vary with color

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

ACROLON™ 218 HS ACRYLIC POLYURETHANE

PART A	B65-600	GLOSS SERIES
PART A	B65-650	SEMI-GLOSS SERIES
PART B	B65V600	HARDENER

Revised: April 12, 2019

APPLICATION BULLETIN

5.22

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 (1-2 mils / 25-50 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. Solvent Clean 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 or before flash rusting occurs. 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.

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	-	
Rusted	C St 3	C St 3	SP 3	-	
Power Tool Cleaning	Pitted & Rusty	D St 3	D St 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:

Spray.....Reducer R7K15, MEK, Reducer #58, or R7K111

Brush/RollReducer #132, R7K132, Reducer #58, or R7K111

If reducer is used, reduce at time of catalyzation.

Airless Spray

Pressure.....2500 - 2800 psi

Hose.....3/8" ID

Tip0.13" - .017"

Filter60 mesh

Reduction.....As needed up to 10% by volume with R7K15 or R7K111, or up to 9% with MEK, R6K10*

Conventional Spray

GunBinks 95

Cap63P

Atomization Pressure.....50 - 70 psi

Fluid Pressure.....20 - 25 psi

Reduction.....As needed up to 10% by volume with R7K15 or R7K111, or up to 9% with MEK, R6K10*

Brush

Brush.....Natural Bristle

Reduction.....As needed up to 10% by volume*

Roller

Cover3/8" woven with solvent resistant core

Reduction.....As needed up to 10% by volume*

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

* Note: Reducing more than maximum recommended level will result in VOC exceeding 340g/L



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Revised: April 12, 2019

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 six parts by volume of Part A with one part by volume of Part B (premeasured components). Thoroughly agitate the mixture with power agitation. Re-stir before using.

If reducer 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 (112.5)	9.0 (225)
Dry mils (microns)	3.0 (75)	6.0 (150)
~Coverage sq ft/gal (m ² /L)	175 (4.3)	346 (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 @ 6.0 mils wet (150 microns):

	@ 35°F/1.7°C	@ 77°F/25°C 50% RH	@ 120°F/49°C
To touch:	4 hours	30 minutes	20 minutes
To handle:	18 hours	6 hours	4 hours
To recoat:			
minimum:	18 hours	8 hours	6 hours
maximum:	3 months	3 months	3 months
To cure:	14 days	7 days	5 days
Pot Life:	4 hours	2 hours	45 minutes
(reduced 5% with Reducer R7K15)			
Sweat-in-Time:	None		

Drying time is temperature, humidity, and film thickness dependent. Paint temperature must be at least 40°F (4.5°C) minimum.

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 #132, R7K132. Clean tools immediately after use with Reducer #132, R7K132. Follow manufacturer's safety recommendations when using any solvent.

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.

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 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 #15, R7K15 or MEK, R6K10.

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.

If maximum recoat time is exceeded, a light abrasion may be necessary to roughen the surface to promote adhesion before recoating.

When over coating for maintenance or covering graffiti, solvent clean with MEK or similar solvent/cleaner prior to overcoating.

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

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