

**STEPS FOR PREPARING DECK PLATES FOR REMOVAL
FROM PT. PINOS LIGHTHOUSE**

1. Remove 60 1/2" x 1" flat head stainless steel screws holding deck plates to stainless steel brackets.
2. Slice with abrasive blade to mark reference for creating new edge of plates in order to have required minimum width of gap (1/4") for sealant.
3. Enlarge existing holes to 5/8" centered on threaded holes in brackets to allow for HDPE sleeves on replacement 1/2" screws.
4. With plates held in existing position using 1/2" threaded rods with HDPE sleeves remove posts between pairs of plates and machine round clearance hole for plastic sleeve between deck panels and railing post.
5. Remove acorn nuts on skirt (vertical panel welded to bottom of deck) and clear debris around stud to allow deck panel to be removed.
6. Remove epoxy filler (thought to be Belzona) between skirt and bracket to allow deck panel to be removed.
7. Mark plates so that they may be identified after 16 mil coating is applied.
8. Remove deck plates individually, remove heavy corrosion and debris that would prevent replacing plate in its correct position.
9. Replace deck plate with spacers in place (3/16" under deck and 1/16" behind skirt) with additional thickness to compensate for the thickness of the final coatings, (0.100" plus 0.016" to total 0.116")
10. After clearancing holes in skirt to allow deck to be positioned as above, measure space behind skirt needed to be removed so that deck panel holes may line up with holes in brackets.
11. Once all deck panels have been completed remove all of them in one day using agreed upon method, assumed to be "cherry picker".



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Ken



Katherina Hebb

Hello, Ken! Knock! Knock! It's the g



Monica Cowy

Ken, æifæeling so goodæel join me

The stainless steel washers are to be put on the horizontal fasteners to hold the vertical section of the deck concrete. I would think a single washer would provide 1/16"-1/8" clearance.

The HDPE shims should be used on the horizontal between the bottom of the aluminum deck and the steel prevent any cathodic reactions.

I am creating some details that will clarify this assembly.

Hope that helps.

Best,

Mark Dietrich, AIA
Project Architect
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Technical Datasheet

VAPORTIGHT COAT®-SG3
100% Solids, Moisture mitigation and pH barrier coating

CSI Div. 07 + 09

07 26 00 VAPOR RETARDERS
 09 96 56 EPOXY COATINGS

LEED Points

IEQ Credit 4.2, Low-Emitting Materials, Paints & Coatings: 1 Point
 Using this AQUAFIN product can help contribute to LEED certification of projects in the categories shown above.

Product Description:

VAPORTIGHT COAT®-SG3 is a unique 2-component, moisture tolerant, low viscosity, solvent free, chemically enhanced epoxy based product which reduces the passage of water vapor and moisture through slabs on, below and above grade as well as split slabs, thus eliminating delamination of adhesives, floor coverings and coatings. SG3 meets or exceeds the requirements of ASTM F3010-13 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings.

Typical Applications:

- Indoor and outdoor, new and existing concrete slabs: on grade, above grade, below grade and split slabs, old cementitious underlayment (no gypsum) and ceramic tiles with missing or damaged under-slab vapor barriers.
- Industrial/retail facilities, office buildings, supermarkets, food processing plants, airplane hangars, hospitals, schools, etc.
- Use VAPORTIGHT COAT-SG2 for capillary infiltration of oil or other chemicals from the ground or to treat oil-contaminated slabs or radon infiltration.

Advantages:

- One coat system - No sand broadcast
- Low viscosity, solvent free, no VOC's
- For slabs with MVER up to 25 lbs and RH up to 100%
- ASTM E 96 perm rating ≤0.10
- Flooring system installed next day
- Can be applied to damp & green concrete (min. 5 days old)
- High alkalinity barrier (pH 14)
- Compatible with most flooring systems
- Does not support mold growth
- Great for indoor applications: low odor and non-flammable.
- SG3 passed Indoor Air Quality Material Emissions Test as per DIN EN ISO 16000 (Report CT-10-06-22-01:250005/2-3)

Testing Concrete Slabs for Contaminants:

Aquafin recommends testing slabs with unknown history, as well as slabs with previously failed flooring systems, for contaminants (i.e. hydrocarbons, other organic compounds, un-reacted water soluble silicates, chlorides, ASR, Sulfurous compounds, etc.) to determine suitability of SG3. Provide Ion Chromatography and IR Spectroscopy data to Aquafin before commencing application. A separation screed may be required.

Physical and Technical Data	
Material	2-component, clear epoxy
Density:	~9.08 lbs/gal (1.09 ± 0.02 kg/l)
VOC:	0 g/L
Volume Solids	100 %
Flash Point: Part A Part B	>212°F (>100°C) 170°F (77°C)
Mixing Ratio	100:50 (by weight)
Viscosity	600±80 cps (mPa*s) @ 77°F (25°C)
Pot Life @ 73°F (23°C)	~35 Minutes
Open to Foot Traffic	after 12 hrs at 73°F (23°C)
Recoat Time at 73°F (23°C)	minimum 12 hrs max. 5 days, observe dew point!
Application Temperature	min. 45°F (8°C) - max. 95°F (35°C)
Curing Temperature	min. 45°F (8°C)
Full Strength	after 7 days at 73°F (23°C)
Compressive Strength:	>11,000 psi (>80 MPa)
Adhesion to Concrete (ASTM D7234)	>480 psi (3.3 MPa) Failure in substrate
pH 14 Resistance	Pass 14 day test. (ASTM D-1308)
Water Vapor Transmission (ASTM E 96)	0.100 grains/h-ft ² -in.Hg
Average Critical Radiant Flux (CRF)	1.00 W/cm ² - Passed = nonflammable (ASTM E 648-03)
Methane Permeability (ISO 15105-2)	2.20 [cm ³ / (m ² *d*bar)] at 36 mils (0.90 mm) thickness
Indoor Air Quality Control (DIN EN ISO 16000)	Passed: VOC (0 mg/m ³) & Formalde- hyde emissions (<0.01 ppm)
All data are average values obtained under laboratory conditions. In practical use tempera- ture, humidity and absorbance of the substrate may influence the above given values.	

Moisture Vapor Emission Testing:

Aquafin recommends testing to determine moisture vapor emission rate (MVER) including "Anhydrous Calcium Chloride" testing as per ASTM F 1869-11 on slabs to be treated, to determine the MVER in lb/1000 ft²•24 hrs (grams/m²•hr) and to determine RH content (%) as per ASTM F 2170. This testing can be used to determine application rate of material required to obtain AQUAFIN warranty.

VAPORTIGHT COAT®-SG3

Substrate Preparation:

- Concrete must be a minimum 5 days old or have reached a minimum 2,500 psi (17 MPa) compressive strength, to be treated with SG3. Concrete must be clean, sound and have an "open"/absorptive surface ("tooth and suction"). All slabs must be mechanically prepared (i.e. Shot blast) to a concrete surface profile (CSP) 3 - 5 per the International Concrete Repair Institute (ICRI) Guideline No. 301-2R-2013. **Acid etching is not allowed, broom finish on new slabs is not acceptable.** Burn off any reinforcing fibers and vacuum remains.
- Remove glaze from "quarry tiles".
- After surface preparation, check slab surface with the water drop method. Pour a drop of water about the size of a dime in several places. If the water beads, the surface is not absorptive and requires additional preparation or core extraction and testing. If the water "wets out" or penetrates the concrete within 30 - 60 seconds the surface is ready to receive the SG3 treatment.
Note: This method does not replace pre-testing of concrete cores. A test application is highly recommended on existing slabs to determine adhesion (i.e. Elcometer, etc.).
- Treat saw cut and expansion joints as per drawings on page 3.

Separation Screed:

Concrete floors which contain water soluble, unreacted sodium and/or potassium silicates or chlorides can not be coated when certain thresholds of these compounds are exceeded. If these soluble mediums have deeper penetration into the substrate than standard steel shot blasting will remove, it will be required to remove 3/8" - 1/2" (10 mm - 13 mm) of the concrete surface and replace it with a separation screed, such as MORTAR-Screed to prevent substrate failure when trapped rising moisture activates these mediums. SG3 will then be applied over the separation screed. All separation screed surfaces must be mechanically prepared like a concrete surface [CSP 3 - 5] as indicated above.

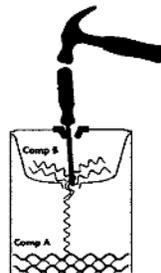
Water-Vapor Transmission Treatment:

1. Remove existing floor coverings, coatings, adhesives, curing compounds, efflorescence, dust, grease, laitance, etc. down to bare concrete with steel shot blasting, scarifying or grinding using a diamond cup blade (run with low RPM and assure that surface is profiled).
2. Repair cracks with a suitable patching mortar or SG3 mixed with 5 parts by volume of oven-dried sand.
3. Install cementitious underlayment's or leveling mortars on top of SG3.

Mixing:

SG3 is supplied in the appropriate mixing ratio (Comp-A = resin, Comp-B = hardener). Always mix full units.

- Use chemical resistant gloves and goggles when mixing or applying SG3.
 - Material should be minimum 60°F (15°C) at time of mixing.
1. For 4.6 & 2.7 gal kits only (7.3 gal kit packaged separate A&B containers!): Pierce a hole through the rubber membrane in the lid and continue through the bottom of "lid well". Assure Part B completely drains into Part A.
 2. Stir mixture for approx. 5 minutes to a homogenous, streak free consistency, using a slow speed drill (~300 rpm) with a PS Jiffy blade. Avoid entrapping air. Ensure that the material at the bottom and sides are scraped and thoroughly mixed.
 3. Pour mixed material from the mixing container into another, clean container and carefully mix for additional 30 seconds.



Application:

- Substrate and ambient temperatures must be between 45°F (8°C) and 95°F (35°C).
 - All exterior applications must be protected from strong sun light, wind and rain until fully cured.
 - All interior applications must be protected from drafts to avoid "skinning over".
 - SG3 surface must be protected from bond inhibiting contaminants, i.e. dirt, dust and debris.
 - Application equipment needed: Clean mixing containers, soft-edge squeegee, non-shed synthetic roller.
1. All surfaces must be saturated surface dry (SSD) with no standing water.
 2. Pour SG3 in sufficient quantity over the area to be treated and uniformly distribute with a notched squeegee.
 3. Follow with a non-shed roller, back rolling at right angle (90 degrees) to the squeegee application to achieve uniform coverage and let product cure for minimum 12 hours.
- NOTE:** Where sand broadcast is desired use SG2 in lieu of SG3.
4. Re-treat "outgassing channels" and pin-holes by sanding surface, and cleaning with hot water. Make sure surface is dry and re-apply SG3.
 5. Immediately clean all equipment and tools with mineral spirits.

Maximum recoat time:

- Interior Applications: Top coatings (i.e. epoxy, terrazzo, urethane) and flooring systems (i.e. VCT, sheet vinyl, carpet, wood) must be applied within 12 hrs - 5 days.
- Exterior Applications: Top coatings such as epoxy, urethane traffic membranes, must be applied within 24 hrs - 36 hrs.
- If recoat time is missed, SG3 surface must be sanded, cleaned with hot water, and allowed to dry, before application of flooring systems or top coatings.

Flooring

- Water or solvent based adhesives may require a cementitious underlayment (see Aquafin LEVEL-Ultra TDS) of a minimum 1/8" (3 mm) thickness to absorb excess moisture/solvent (check with adhesive manufacturer).
- Pressure sensitive adhesives installed directly over SG3 require a longer "tack" time than listed on manufacturer's literature to prevent adhesive moisture or solvent entrapment.
- Many flooring systems require a more level or smooth surface. In such cases an application of a self-leveling cementitious underlayment (minimum 1/8" (3 mm) thickness) is required to provide a proper substrate for the floor covering and the adhesive (See Aquafin LEVEL-Ultra TDS).
- Do not apply flooring system if SG3 surface is wet due to dew point or other causes.

Underlayment's and Patching:

If cement based toppings, such as underlayments, screeds, "flash" patching, repair mortars are to be used, the manufacturer's recommended primer or Aquafin SLU-PRIMER must be applied over SG3.

Packaging and Shelf Life:

Shelf life is 2 years in closed, original packaging, stored in a dry, cool place.

- 0.24 gal/2.2 lb (0.9 L/1.0 kg) kit (special order only)
- 2.4 gal/22 lb (9.2 L/10 kg) kit.
A-Comp: 1.5 gal/14.48 lb (5.8 L/6.58 kg)
B-Comp: 0.9 gal/7.52 lb (3.4 L/3.42 kg).

VAPORTIGHT COAT®-SG3

Special order size:

- 7.3 gal/65.59 lb (27.5 L/30 kg) kit.
 A-Comp: 4.6 gal/41.06 lb (17.3 L/18.87 kg)
 B-Comp: 2.7 gal/24.53 lb (10.2 L/11.13 kg).

Limitations:

- Do not spray apply SG3.
- Post-cracking of the concrete, slab warping or warping relaxation at joints or cracks after installation of the SG3 may cause a breach in the coating and void warranty.
- Do not apply over gypsum based substrates.
- Do not alter mixing ratios, thin or mix with Cab-O-Sil.
- Call Aquafin Technical Department for slabs with floor heating systems or installation recommendations for any substrates and conditions not listed.

Note:

Installer is responsible for proper product application. Site visits by Aquafin personnel or representatives are solely for the purpose of making technical recommendations, not for providing supervision or quality control. This product is not sold to the Do-it-Yourself market. **For Professional Use Only.**

Safety: Refer to SDS.

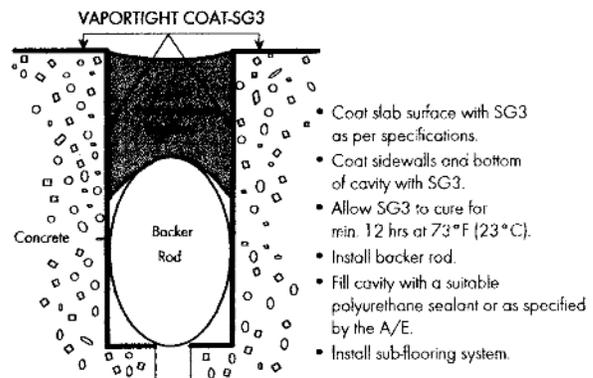
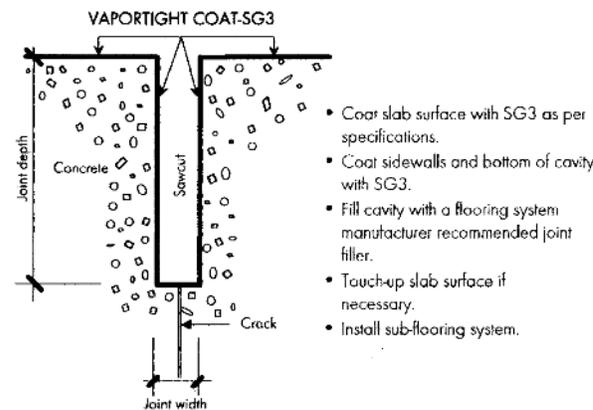
Part A - irritant; sensitizer - contains epoxy resins.

Part B - corrosive; sensitizer - contains amines.

KEEP OUT OF REACH OF CHILDREN.

Spills: Ventilate area. Contain and collect spillage with noncombustible, absorbent materials (i.e. sand, vermiculite, universal binders, sawdust, etc.) and place in container for disposal. Emergency procedures are not required. Dispose of in accordance with current local, state and federal regulations. VOC limit: This product is well below the allowable EPA limits as stated in 40 CFR Part 59.

LIMITED WARRANTY: AQUAFIN, INC. warrants its products to be manufactured free of defects for one year and to be consistent with its standard high quality. We will replace or, at our election, refund the purchase price of, any product which is proven to be defective, provided that the product was properly applied. Our product recommendations are based on Industry Standards and testing procedures. We assume no warranties either written, expressed or implied as to any specific methods of application or use of the product. AQUAFIN, INC. MAKES NO WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. AQUAFIN, INC. shall not be liable for damages of any sort including remote or consequential damages, down time, or delay. Contact Aquafin for information on extended warranty's.



SG3 Application Rates per ASTM F-1869 (CaCl) & F-2170 or ASTM F-2420 (RH - Relative Humidity):										
Moisture vapor emission rate (MVER): listed by lbs/1000 ft² * 24hrs	RH: listed by percentage (%)	No. of coats	Application rate		~Thickness		~Yield: 2.4 gal (9.2L)		~Yield: 7.3 gal (27.5 L)	
			ft²/gal	(kg/m²)	mils	mm	ft²	m²	ft²	m²
up to 10 lbs	<85%	1	155	0.29	10	0.25	370	33.4	1,130	105
10 - 15 lbs	85 - 90%	1	130	0.35	12	0.30	310	28.8	950	88
15 - 25	90 - 100%	1	100	0.45	16	0.40	240	22.3	730	67
Stand-alone coating on slabs		1	90	0.50	18	0.45	215	20.0	655	61
New concrete (min. 5 days old)		1	100	0.45	16	0.40	240	22.3	730	67
Walls: contact our technical dept. Note: all values theoretical. Application thicknesses are approximate. Some variations may apply due to porosity and absorption of substrate.										
Sample Water Vapor Transmission Reduction							Test : ASTM E 96			
Test carried out by independent laboratory (Wet method)	BEFORE: Untreated Control		AFTER: VAPORTIGHT COAT®-SG3							
Water Vapor Transmission: • lbs/1000 ft² * 24 hrs	24.08		Sample A, No.1 0.18 (Mactec, 3/17/06) -				REDUCTION 99%			
Vapor Permeance: grains/hour/ft²/in.Hg	3.17		0.10 @ 16 mils (Nelson Testing, 01/08/14)				ASTM F3010-13			



Concrete Surface Preparation & Profiles

Concrete surface preparation for resurfacers, overlays, sealers, stains, or coatings on existing concrete

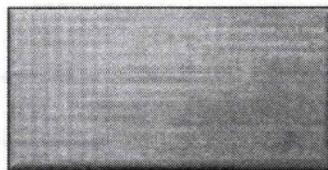
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Concrete Surface Preparation Profiles for Overlay or Restoring Existing Concrete

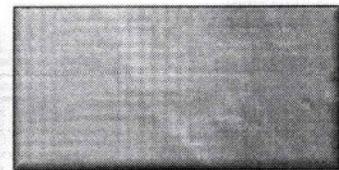
Proper surface preparation of existing concrete is essential for achieving a successful project including resurfacers, polymer-modified or self-leveling overlays, sealers, coatings, or stains. Since there are many products available for overlays and restoration, it is important you know the surface condition requirements for the specific product you plan to use. Taking steps to correctly prepare the existing concrete surface will save you time and money, and can substantially reduce the possibility of coating failure.

These Concrete Surface Profiles were developed by the International Concrete Repair Institute (ICRI), are divided into ten classifications (CSP 1-10) of surface textures based on the average distance from the peaks of the surface to the valleys. They are accepted industry standards to help guide the installer achieve the proper texture for successful bonding of the overlay or coating. The lower number profiles are smoother (CSP 1 is nearly flat), and the higher numbers have more "tooth" and get progressively rougher.

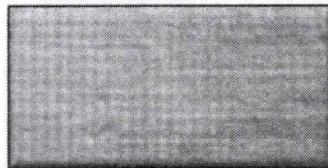
- **These surface profile pictures provide guidelines based on the requirements of the system or products being used.**
- **Use the chart on the next page to validate the method for surface preparation.**



CSP 1 (acid etched)



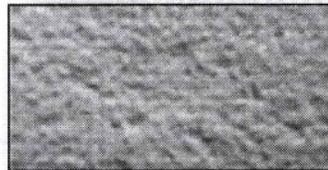
CSP 2 (grinding)



CSP 3 (light shotblast)



CSP 4 (light scarification)



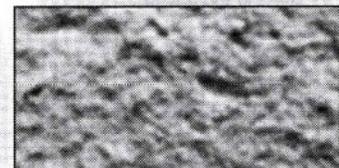
CSP 5 (medium shotblast)



CSP 6 (medium scarification)



CSP 7 (heavy abrasive blast)



CSP 8 (scabbed)



CSP 9 (heavy scarification)



CSP 10 (course planing)

NOTE: ICRI CSP profiles should reference ICRI Technical Guideline No 310-2



Concrete Surface Preparation & Profiles

Concrete surface preparation for resurfacers, overlays, sealers, stains, or coatings on existing concrete

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Validating the Surface Preparation

Concrete Surface Profile (ICRI Method Selector)

	CSP 1	CSP 2	CSP 3	CSP 4	CSP 5	CSP 6	CSP 7	CSP 8	CSP 9	CSP 10
Coating to be applied:										
• Sealers (0-3 mils)	█	█	█							
• Thin-film (4-10 mils)	█	█	█							
• High build (10-40 mils)			█	█	█					
• Self-Leveling (50 mils-1/4 inch)				█	█	█				
• Polymer overlay (1/8-1/4 inch)					█	█	█	█	█	█
Preparation methods:										
• Detergent scrubbing	█									
• Low-pressure water	█									
• Acid etching	█	█								
• Grinding	█	█								
• Abrasive (sand) blasting		█	█	█	█					
• Steel shotblasting*			█	█	█	█	█			
• Scarifying				█	█	█	█	█		
• High/ultra-high pressure water jetting						█	█	█	█	
• Scabbing							█	█	█	█
• Flame blasting								█	█	█
• Milling/rotomilling									█	█

* Preferred method

Preparation method
required for resurfacing
materials

NOTE: ICRI CSP profiles should reference ICRI Technical Guideline No 310-2



Concrete Surface Preparation & Profiles

Concrete surface preparation for resurfacers, overlays, sealers, stains, or coatings on existing concrete

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Notes

- In addition to having the surface clean, with all chemicals, oil, grease, curing compounds, or other contaminants removed, the surface profile of the existing concrete needs to be suitable for the selected overlay. Always consult with the manufacturer for the recommended surface profile.
- Mechanical profiling or acid etching are techniques used to prepare floors for overlays and restorations. Mechanical profiling should always be the first method of choice for roughening the concrete; it is also the safest method. Acid etching can provide adequate surface preparation for some coatings, sealers and toppings, however, acids can be difficult to rinse completely and neutralize, require a well-ventilated area, and they will not remove petroleum-based products or animal vegetable oils from the existing concrete.
- More aggressive surface preparation techniques (flame blasting, scarifying, scabbling and milling/rotomilling) risk the introduction of micro-cracking. Additional surface preparation is required when micro-cracking occurs.
- Repairs for cracking or spalling should be done in the surface preparation process, before the final overlay.
- It is important to always honor control/construction expansion joints.
- Apply the coating to a mock-up or test area under the same conditions of ambient temperature and surface moisture as the installation to verify the surface profile is adequately prepared.

Reference the following industry standards for preparation of concrete from the ASTM International (formerly known as American Society for Testing and Materials-ASTM), NACE International (formerly National Association of Corrosion Engineers), Society for Protective Coatings (SSPC), and the International Concrete Repair Institute (ICRI):

ASTM D4258, Standard Practice for Surface Cleaning Concrete for Coating

ASTM D4259, Standard Practice for Abrading Concrete

ASTM D4260, Standard Practice for Liquid and Gelled Acid Etching of Concrete

ASTM D4261, Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating

ASTM D7682, Standard Test Method for Replication and Measurement of Concrete Surface Profiles Using Replica Putty

SSPC-SP13/NACE 6, Surface Preparation of Concrete

ICRI Standard 310.2 Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair with CSP Chips.

CSP 1

Sealers

0 to 3 mils / 0 to 0.075 mm

CSP 2

Thin Films

4 to 10 mils / 0.1 to 0.25 mm

CSP 3

High-Build Coatings

10 to 40 mils / 0.25 to 1 mm

CSP 4

Self-Leveling Toppings

50 mils to 1/8 inch / 1.25 to 3.175 mm

CSP 5

CSP 6

CSP 7

CSP 8

CSP 9

CSP 10

Polymer Overlays

1/8 inch to 1/4 inch / 3.175 mm to 6.35mm

Concrete Overlays & Repair Materials

1/4 inch + / 6.35mm +

Spectrem® 2

Single-Component, Neutral-Cure Silicone Sealant for 2-Sided Structural Glazing

Product Description

Spectrem® 2 is a high-performance, single-component, neutral-cure, medium-modulus silicone sealant.

Basic Uses

Spectrem 2 is ideal for a variety of perimeter caulking and glazing applications, including 2-sided structural glazing. Spectrem 2 may be used on substrates such as aluminum, glass, steel, painted metal, plastic, stone, concrete and brick.

Features and Benefits

- With medium modulus, can be used as a structural tensile bead and weather sealant.
- Offering excellent adhesion to a variety of substrates including glass and metal, a single product can be used for a variety of applications on the same job from 2-sided structural glazing to perimeter caulking and joint filling.
- Resistance to driving rain, ozone, ultraviolet light, and temperature extremes safeguards against water penetration with exceptional weatherability in all climate zones.
- Wide variety of colors to choose from with custom colors and color matching also available for a particular project.
- No mixing required, so product is always ready to use for immediate application with conventional caulking equipment.
- Greenguard Gold certification ensures safety for use in the most sensitive indoor environments including hospitals and schools.

Availability

Immediately available from your local Tremco Sales Representative, Tremco distributor or warehouse.

Packaging

10.1-oz (300-mL) cartridges

20-oz (600-mL) sausages

2-gal (7.6-L) and 4.5-gal (17-L) pails

55-gal (208.2-L) drums

All colors are not available in all package sizes. Contact Tremco Customer Service for more information.

Colors

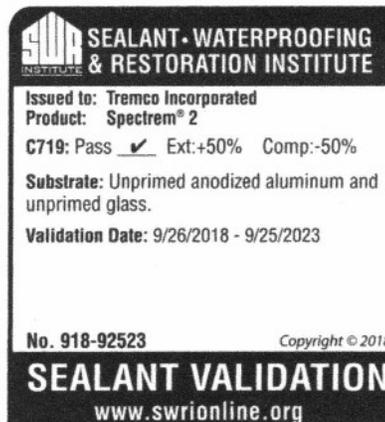
Aluminum Stone, Anodized Aluminum, Black, Bronze, Gray, Limestone, Off White, Precast White, White, Clear and Light Bronze

Limitations

- Do not apply to damp or contaminated surfaces.
- Use with adequate ventilation.
- Not intended for continuous water immersion.
- Only black silicones are recommended for structural glazing applications.

Substrate Preparation

Surfaces must be sound, clean, and dry. Contact surfaces should be free of loose dirt, dust, oils, and any other contaminants. Tremco recommends that air temperatures be 40 °F (5 °C) or above before applying any sealant. If colder weather is imminent, please refer to the Tremco Guide for Cold Weather Applications at www.tremcosealants.com.



Applicable Standards

Spectrem 2 meets or exceeds the requirements of the following specifications:

- ASTM C920 Type S, Grade NS, Class 50, Use NT, M, G, A and O
- ASTM C1248 Standard Test Method for Staining of Porous Substrate by Joint Sealants
- ASTM C1184 Standard Specifications for Structural Silicone Sealants
- U.S. Federal Specification TT-S-001543A (COM-NBS) Class A
- CAN/CGSB 19.13-M87
- U.S. Federal Specification TT-S-00230C (COM-NBS) Class A, Type II
- Black meets all of AAMA 802.3-92 (Type I and II), 805.2-94 (Group C), and 808.3-92
- Conforms to ASTM C1184 Use G and O (Aluminum)

Application

Spectrem 2 is easy to apply with conventional caulking equipment. Fill joint completely and tool. At 75 °F (23.9 °C), 50% RH, a durable skin will form typically within fewer than 10 minutes. Please visit www.tremcosealants.com for complete application instructions.

Joint Design

May be used in any joint designed in accordance with accepted architectural/engineering practices. Joint width should be 4 times anticipated movement, but not less than 1/4" (6 mm) wide.

Joint Backing

Approved structural glazing tapes, such as SGT 900 Series Tape, compatible silicone, or SCR spacer gaskets are approved to promote properly dimensioned tensile beads when used in 2-sided structural glazing applications.

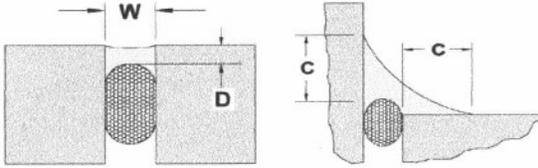
When Spectrem 2 sealant is used in non-structural glazing applications, closed-cell polyethylene backer rod is preferred as joint backing to control depth of sealant bead. Where depth of joint will prevent use of joint backing, an adhesive-backed polyethylene tape should be installed to prevent three-sided adhesion. Joint backing must be dry at time of sealant application.

Spectrem® 2

Single-Component, Neutral-Cure Silicone Sealant for 2-Sided Structural Glazing

Sealant Dimensions

W = Sealant width, D = Sealant depth, C = Contact area.



Expansion joints: The minimum joint width (W) and sealant contact depth (C) of any silicone sealant application is 1/4" by 1/4" (6.35 mm by 6.35 mm). It is recommended that the sealant joint depth (D), when measured from the face of the sealant bead to the crown of the backer rod, be equal to one-half the sealant joint width (W), known as 2:1 width-to-depth joint ratio. For silicone sealants, the minimum sealant joint depth (D) at crown of backer rod is 1/8" (3 mm) and the maximum sealant joint depth at crown of backer rod is 1/2" (13 mm). For joints that are wider than 1" (25 mm), contact Tremco's technical services or the Tremco sales representative nearest to the application site for additional support.

Window perimeter joints: For fillet beads, or angle beads around windows and doors, the sealant should exhibit a minimum sealant contact depth [C] of 1/4" (6.34 mm) onto each substrate. Proper joint backing or bond breaking must be implemented to allow the sealant to perform when exposed to joint movement.

STRUCTURAL GLAZING: Special consideration must be taken when using Spectrem 2 in structural glazing applications; therefore, the above sealant dimension guidelines do not apply in these applications. Consult Tremco Technical Services for structural glazing reviews and recommendations.

Clean Up

Tooling is recommended immediately after application to ensure firm, intimate contact with the joint interface. Dry tooling is preferred. Cleaning can be accomplished with solvents such as IPA, Xylene, Toluene or MEK while sealant is in an uncured state.

Warranty

Tremco warrants its Products to be free of defects in materials, but makes no warranty as to appearance or color. Since methods of application and on-site conditions are beyond our control and can affect performance, Tremco makes no other warranty, expressed or implied including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, with respect to Tremco Products. Tremco's sole obligation shall be, at its option, to replace, or refund the purchase price of the quantity of Tremco Products proven to be defective and Tremco shall not be liable for any loss or damage.

Please refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements

Spectrem® 2

Single-Component, Neutral-Cure Silicone Sealant for 2-Sided Structural Glazing

TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUES
As Supplied:		
Flow, sag or slump inches	ASTM C639	Nil
Sag	ASTM D2202	0" to 0.03" (0 mm to 0.1 mm)
Tack free time	ASTM C679	20 to 40 min
Tooling Time	Skin Formation	10 to 15 min
As Cured: After 14 days at 77 °F (25 °C), 50%RH		
Cyclic Movement	ASTM C719	±50%
Elongation	ASTM D412	235 to 260%
Hardness (shore A)	ASTM C661	37 to 40
Peel Strength Aluminum and Glass	ASTM C794	16 to 22 pli (2.81 to 3.86 kN/M)
Staining of Porous Substrates White Marble Primed & Unprimed	ASTM C1248	No Stain
Tear strength, die ("C")	ASTM D624	35 to 40 pli (6.14 to 7.02 kN/M)
Tensile Strength at 100% Elongation	ASTM C1135	90 to 100 psi (0.62 to 0.69 MPa)
Tensile Strength at Max Elongation	ASTM D412	220 to 230 psi (1.52 to 1.59 MPa)
As Cured: After 21 days at 77 °F (25 °C), 50%RH		
Ultimate Elongation	ASTM C1135	261%
Ultimate Tensile Strength	ASTM C1135	123 psi (0.85 MPa)

0319/SPEC2DS-STPlease refer to our website at www.tremcosealants.com for the most up-to-date Product Data Sheets.**Tremco Commercial Sealants & Waterproofing**

3735 Green Rd
Beachwood OH 44122
216.292.5000 / 800.321.7906

1451 Jacobson Ave
Ashland OH 44805
419.289.2050 / 800.321.6357

220 Wicksteed Ave
Toronto ON M4H1G7
416.421.3300 / 800.363.3213

1445 Rue de Coulomb
Boucherville QC J4B 7L8
514.521.9555



CIM 61BG EPOXY PRIMER

COATING PROFILE

DESCRIPTION CIM 61BG Epoxy Primer is a two component high solids epoxy coating formulated as a primer for porous and non-porous surfaces such as concrete and metal.

ADVANTAGES CIM 61BG Epoxy Primer can be used to prime a variety of surfaces.

- May be used as a primer for freshly blasted metal to prevent flash rust from occurring, prior to coating with CIM.
- May be used as a primer for properly prepared concrete to minimize the effects of outgassing.
- Approved for contact with potable water in accordance with ANSI/NSF 61.

SURFACE PREPARATION

GENERAL: Substrates must be **clean and dry** with no oils, grease or loose debris. Perform adhesion tests to confirm adequacy of surface preparation. See C.I.M. Industries' specific substrate Instruction Guide for specific guidelines.

CONCRETE: ICRI-CSP 4-6 surface profile exposing aggregate. Concrete must exhibit minimum 3,000 psi compressive strength and be free of release agents and curing compounds. The substrate must be clean and dry (see CIM Instruction Guide IG-2), and free of contaminates.

STEEL: Minimum 3 mil profile.
Immersion service – SSPC-SP10 / NACE No. 2 Near White Blast.
Non-Immersion service – SSPC-SP6 / NACE No. 3 Commercial Blast.

OTHER METALS: SSPC-SP1 solvent clean and abrasive blast to roughen and degloss the surface.

WOOD: Substrate must be clean, dry and free of surface contamination.

COLOR CIM 61BG Epoxy Primer is a two component epoxy coating consisting of: CIM 61BG Epoxy Resin which is buff, and CIM 61BG Hardener which is amber.

MIXING RATIO 4 Parts Resin: 1 Part Hardener by Volume

SOLIDS BY VOLUME 80% mixed (1280 dry mil x sq. ft./gal.) (ASTM D 2697-7 days)

DENSITY CIM 61BG Resin approximately 13.39 lbs./gal.
CIM 61BG Hardener approximately 8.17 lbs./gal.

THEORETICAL COVERAGE 320 sq. ft./gal. (about 5 wet mils). Irregular surfaces, waste, spillage, and application technique effect actual coverage.

VOC (EPA 24) 170 g/l (1.41 lb./gal.) CIM 61BG Epoxy Primer complies with the toughest VOC regulations.



CIM 61BG EPOXY PRIMER

GENERAL APPLICATION INFORMATION

USE FOR PROFESSIONAL USE ONLY.

PRECAUTIONS Mixing equipment and surfaces where material is applied must be **ABSOLUTELY DRY**. Do not apply in wet weather, when rain is imminent or when the surface may become wet before the coating is dry. Strictly observe mixing, induction times and substrate temperature requirements.

TEMPERATURE Throughout the curing period, the surface should be minimum 50°F (10°C) AND minimum 5°F (3°C) above the dew point. Contact C.I.M. Industries for lower temperature application.

EQUIPMENT Air Spray, Airless Spray, Brush, or Roller ($\frac{3}{8}$ " or $\frac{1}{2}$ " synthetic nap).

Equipment	Air Spray	Airless
	(DeVilbiss, JGA, or MBC)	45:1
Air Hose	$\frac{1}{2}$ "	N/A
Fluid Hose	$\frac{1}{2}$ "	$\frac{3}{8}$ " to $\frac{1}{2}$ "
Spray Gun	DeVilbiss MBC-510	
Tip	E or D	0.021" to 0.027"
Cap	704	N/A
Atomizing Pressure	up to 100 psi	1500 to 3000 psi
Pot Pressure	10 to 20 psi	N/A

POT LIFE About 3.5 hours at 77°F (25°C).

MIXING Thoroughly mix each of the two components separately: CIM 61BG Epoxy Resin and CIM 61BG Hardener. **DO NOT HAND MIX**. Use a power mixer. Consistency should be uniform and smooth with no settled pigments remaining at the bottom. Add entire contents of each component and thoroughly mix until color and consistency are uniform. **ALLOW A MINIMUM OF 15 MINUTES INDUCTION TIME FOR MIXED PRIMER BEFORE APPLICATION.**

The two components must be combined in proper ratios for this product to set up properly. Failure to adequately mix each component separately to achieve a uniform dispersion or failure to blend to the proper volume proportion will result in a failure of the coating to perform adequately.

DO NOT THIN. Allow cold material to warm to room temperature before attempting to lower viscosity, warm mixed coating before applying. Do not heat open containers above the materials flash point of 80°F (27°C). Do not exceed 110°F (43°C).

APPLICATION

PRIMER: Apply CIM 61BG Epoxy Primer at a coverage rate of **5 to 10 wet mils** per coat. For best results apply primer when the substrate is in a temperature declining mode and not in direct sunlight. A uniform coating free of holidays or pinholes is necessary to minimize outgassing effects during the application of the CIM membrane to porous surfaces such as concrete. Surfaces may require additional coats to achieve a pinhole free finish.

CONTACT C.I.M. INDUSTRIES FOR SPECIFIC RECOMMENDATIONS AND INSTRUCTION GUIDES.
www.cimindustries.com



CIM 61BG EPOXY PRIMER

GENERAL APPLICATION INFORMATION (Continued)

APPLICATION (Continued)

MEMBRANE: Allow CIM 61BG Epoxy Primer to dry at least 8 hours at 70°F (21°C) to permit solvent loss. Membrane over coating prior to solvent loss may result in bubble formation in the membrane. Prior to membrane application, test for the presence of amine blush by testing the pH of the epoxy. The pH of the epoxy should be 7-8. If the pH is higher than 8, solvent wipe with methyl ethyl ketone until the pH is within the recommended range. Application of CIM membrane to epoxy primer with a high pH will result in poor adhesion. When applied to porous surfaces, CIM 61BG Epoxy Primer will greatly reduce the effects of outgassing, but it may not completely prevent the occurrence. CIM membranes and primer should be applied following C.I.M.'s published written instructions including application of the membrane when substrate temperature is declining.

RECOATING The recoat window for applying CIM membrane to CIM 61BG Epoxy Primer shall be no longer than 48 hours.

DRYING TIME Allow at least 8 hours between coats or applying a CIM membrane coating. If more than 48 hours has past since the application of CIM 61BG Epoxy Primer, or the CIM 61BG Epoxy Primer is otherwise contaminated use one of the following procedures:

1. Test surface for pH and check for contaminates. Solvent wipe with methyl ethyl ketone to clean surface and reapply CIM 61BG Primer
2. Test surface for pH and check for contaminates. Solvent wipe with methyl ethyl ketone to clean surface. Abrade the existing CIM 61 BG Primer. Apply CIM Bonding Agent and apply CIM membrane. If the CIM 61BG Primer is damaged during abrading. An additional application of Primer may be necessary to insure a monolithic primer application.

CLEAN UP Clean all equipment immediately after use with xylene or MEK. Thoroughly flush spray equipment before coating has had a chance to set up.

CONTACT C.I.M. INDUSTRIES FOR SPECIFIC RECOMMENDATIONS AND INSTRUCTION GUIDES.
www.cimindustries.com



CIM 61BG EPOXY PRIMER

SHIPPING, STORAGE AND SAFETY DATA

WARNING Flammable. Use only in well ventilated areas. Do not store or use near open flame, sparks or hot surfaces. Keep tightly closed. Avoid contact with moisture or water.

SAFETY INFORMATION This product contains ingredients which are considered to be hazardous. Solvent exposure may cause dizziness, headache or nausea. Prolonged exposure may cause permanent brain or nervous system damage. Adequate health and safety precautions should be observed during storage, handling, application and clean-up. Refer to C.I.M. Industries' Material Safety Data Sheets for further details regarding the safe use of this product.

PACKAGING CIM 61BG Epoxy Primer is packaged in 1 gallon units consisting of 0.8 gallon of CIM 61BG Resin and 0.2 gallon of CIM 61BG Hardener and 5 gallon units consisting of 4 gallons of CIM 61BG Resin and 1 gallon of CIM 61BG Hardener. Proper volumes of each must be mixed thoroughly prior to application.

CIM 61BG (5 gallon unit)

CIM 61BG (4-1 gallon kit)

SHIPPING

Weights 66 lbs per 5 gallon unit

55 lbs per box (4-1 gallon kits)

Properties

Flash Point 80°F (27°C)

80°F (27°C)

Shipping Name Coating Solution

Corrosive Liquid, Flammable, n.o.s.

DOT Class Class 3, UN1139, PG III
polyamines)

Class 8, UN2920, PGII, (xylene,

STORAGE CIM 61BG Epoxy Resin

CIM 61BG Hardener

Temperature 40°F to 110°F (5°C to 43°C)

40°F to 110°F (5°C to 43°C)

Shelf Life 24 months

24 months

NFPA Class IC

Class IC

WARRANTY & LIMITATION OF SELLER'S LIABILITY

C.I.M. Industries Inc. (C.I.M.) warrants only that CIM 61BG Epoxy Primer conforms to C.I.M.'s current quality control standards at the time of manufacture. Due to application variables beyond C.I.M.'s control which may affect results, C.I.M. makes no other warranty of any kind, expressed or implied, including that of merchantability. If breach of warranty is established, the buyer's exclusive remedy shall be repayment of the purchase price of the non conforming CIM product or, at C.I.M.'s option, resupply of conforming product to replace the non-conforming product. The buyer expressly waives any claim to additional damages, including consequential damages.

THE INFORMATION PRESENTED IN THIS PUBLICATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

CONTACT C.I.M. INDUSTRIES FOR CURRENT INFORMATION.

FOR PROFESSIONAL USE ONLY.

www.cimindustries.com



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Web site: www.cimindustries.com

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AMERLOCK® 2 VOC

DESCRIPTION

VOC Compliant Fast Dry, High Solids Epoxy Coating

PRINCIPAL CHARACTERISTICS

- Fast drying properties
- VOC compliant for <100 g/L specifications
- High performance coating for new or old steel
- Self Priming in many applications
- Compatible with prepared, damp surfaces
- **Compatible with adherent rust remaining on prepared surfaces**
- Dry temperature resistance up to 450°F on insulated or uninsulated surfaces when mixed with AMERCOAT 880 glass flake additive

COLOR AND GLOSS LEVEL

- Standard primer colors and custom colors
- Semi-gloss

Note: Epoxy coatings will chalk and fade with exposure to sunlight. Light colors are prone to ambering to some extent. Note that product tinted to custom colors are not recommended for immersion service. Only use factory grind batches for immersion

BASIC DATA AT 68°F (20°C)

Data for mixed product	
Number of components	Two
Volume solids	83 ± 2%
VOC (Supplied)	max. 0.7 lb/US gal (approx. 84 g/l)
Temperature resistance (Continuous)	To 250°F (121°C)
Temperature resistance (Intermittent)	To 350°F (177°C)
Recommended dry film thickness	4.0 - 8.0 mils (100 - 200 µm) depending on system
Theoretical spreading rate	333 ft ² /US gal for 4.0 mils (8.3 m ² /l for 100 µm)
Shelf life	Base: at least 36 months when stored cool and dry Hardener: at least 24 months when stored cool and dry

Notes:

- See ADDITIONAL DATA – Overcoating intervals
- See ADDITIONAL DATA – Curing time
- Color will drift at elevated temperatures
- Intermittent temperature resistance should be less than 5% of the time, and maximum 24 hours



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AMERLOCK® 2 VOC

Aged coatings and repairs

- All surfaces must be clean, dry, tightly bonded and free of all loose paint, corrosion products or chalky residue
- Abrade surface, or clean with PREP 88. This product is compatible over most types of properly applied and tightly adhering coatings, however, a test patch is recommended to confirm compatibility

Repair

- Ensure the coating system is sound and well adhered
- Do not apply over acrylic coatings or coatings that exhibit poor solvent resistance
- A test patch is recommended to determine compatibility and adhesion
- Sweep blast or otherwise thoroughly abrade the existing coating in accordance with SSPC SP-7
- Alternately, PREP 88 may be used to prepare some existing coatings. Please refer to PREP 88 data sheet for details
- Feather the edges of tightly adhered, in-tact coatings at the perimeter of repair areas
- Power tool clean the existing steel in accordance with SSPC SP-3 (atmospheric service) or SSPC SP-11 (immersion service)

Substrate temperature and application conditions

- Surface temperature during application should be between 20°F (-7°C) and 122°F (50°C)
- Surface temperature during application should be at least 5°F (3°C) above dew point
- Ambient temperature during application and curing should be between 20°F (-7°C) and 122°F (50°C)
- Relative humidity during application should be above 0% and below 90%

SYSTEM SPECIFICATION

- Primers: Direct to substrate; DIMETCOTE- Series Primers, AMERCOAT 68HS, AMERCOAT 68MCZ
- Topcoats: AMERCOAT 450-Series Polyurethanes, AMERSHIELD VOC, PSX 700, PSX One

INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 50:50 (1:1)

- Pre-mix base component with a pneumatic air mixer at moderate speeds to homogenize the container. Add hardener to base and agitate with a power mixer for 1-2 minutes until completely dispersed

Induction time

15 minutes

Pot life

1 hour at 70°F (21°C)

Note: See ADDITIONAL DATA – Pot life



AMERLOCK® 2 VOC

Application

- Area should be sheltered from airborne particulates and pollutants
- Avoid combustion gases or other sources of carbon dioxide that may promote amine blush and ambering of light colors
- Ensure good ventilation during application and curing
- Provide shelter to prevent wind from affecting spray patterns
- PPG 97-739 and tert-butyl acetate are VOC exempt thinners which can be used without limit to maintain < 100 g/L. The following thinners may be used up to 2.5 oz. per gallon to maintain a VOC of < 100 g/L.

Material temperature

Material temperature during application should be between 40°F (4°C) and 90°F (32°C)

Air spray

- Use standard conventional equipment

Recommended thinner

THINNER 21-06 (AMERCOAT 65) (xylene), THINNER 21-25 (AMERCOAT 101) (recommended for > 90°F (32°C))

Volume of thinner

0 - 20%

Nozzle orifice

Approx. 0.070 in (1.8 mm)

Airless spray

- 45:1 pump or larger
- Can be applied with plural component equipment

Recommended thinner

THINNER 21-06 (AMERCOAT 65) (xylene), THINNER 21-25 (AMERCOAT 101) (recommended for > 90°F (32°C))

Volume of thinner

0 - 5%, depending on required thickness and application conditions

Nozzle orifice

0.017 - 0.019 in (approx. 0.43 - 0.48 mm)



AMERLOCK® 2 VOC

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INSTRUCTIONS FOR USE

Mixing ratio by volume: base to hardener 50:50 (1:1)

- Pre-mix base component with a pneumatic air mixer at moderate speeds to homogenize the container. Add hardener to base and agitate with a power mixer for 1-2 minutes until completely dispersed

Induction time

15 minutes

Pot life

1 hour at 70°F (21°C)

Note: See ADDITIONAL DATA – Pot life



AMERLOCK® 2 VOC

Brush/roller

- Use a high quality natural bristle brush and/or solvent resistant, 3/8" nap roller. Ensure brush/roller is well loaded to avoid air entrainment. Multiple coats may be necessary to achieve adequate film-build

Recommended thinner

Thinner 21-06 (Amercoat 65, 97-727, xylene) or Thinner 21-25 (Amercoat 101) for temperatures > 90 F.

Volume of thinner

Up to 5% THINNER can be added if desired

Cleaning solvent

AMERCOAT 12, 12E, or 12V Cleaner, 97-739, AMERCOAT 911 or AMERCOAT 65 thinner (xylene)

ADDITIONAL DATA

Overcoating interval for DFT up to 5.0 mils (125 µm)					
Overcoating with...	Interval	32°F (0°C)	50°F (10°C)	70°F (21°C)	90°F (32°C)
itself	Minimum	24 hours	6 hours	3 hours	1.5 hours
	Maximum	3 months	2 months	30 days	14 days
urethane and PSX	Minimum	24 hours	6 hours	3 hours	1.5 hours
	Maximum	30 days	14 days	7 days	4 days

Notes:

- Dry times are dependent on air and surface temperatures as well as film thickness, ventilation, and relative humidity. Maximum recoating time is highly dependent upon actual surface temperatures – not simply air temperatures. Surface temperatures should be monitored, especially with sun-exposed or otherwise heated surfaces. Higher surface temperatures shorten the maximum recoat window
- Surface must be clean and dry. Any contamination must be identified and removed. A detergent wash with PREP 88 or equivalent is required prior to application of topcoats after 30 days of exposure. However, particular attention must be paid to surfaces exposed to sunlight where chalking may be present. In those situations, a further degree of cleaning may be required. PPG Technical Service can advise on suitable cleaning methods. If maximum recoat/topcoat time is exceeded, then roughen surface.

Curing time for DFT up to 5.0 mils (125 µm)			
Substrate temperature	Dry to touch	Dry to handle	Service- water immersion
32°F (0°C)	24 hours	38 hours	21 days
50°F (10°C)	8 hours	13 hours	7 days
70°F (21°C)	2 hours	4.5 hours	3 days
90°F (32°C)	1 hour	2 hours	48 hours



AMERLOCK® 2 VOC

Pot life (at application viscosity)	
Mixed product temperature	Pot life
50°F (10°C)	2 hours
70°F (21°C)	1 hour
90°F (32°C)	30 minutes - 45 minutes

Note: AMERCOAT 8 thinner can be used to extend pot life approximately 10 - 20% in hot weather conditions

Product Qualifications

- Compliant with USDA Incidental Food Contact Requirements
- AWWA D102-06 ICS #1, #2, #3, #5
- LEED's compliant for Anti-corrosive Paint category

SAFETY PRECAUTIONS

- For paint and recommended thinners see INFORMATION SHEETS 1430, 1431 and relevant Material Safety Data Sheets
- This is a solvent-borne paint and care should be taken to avoid inhalation of spray mist or vapor, as well as contact between the wet paint and exposed skin or eyes

WORLDWIDE AVAILABILITY

It is always the aim of PPG Protective and Marine Coatings to supply the same product on a worldwide basis. However, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

REFERENCES

• CONVERSION TABLES	INFORMATION SHEET	1410
• EXPLANATION TO PRODUCT DATA SHEETS	INFORMATION SHEET	1411
• SAFETY INDICATIONS	INFORMATION SHEET	1430
• SAFETY IN CONFINED SPACES AND HEALTH SAFETY, EXPLOSION HAZARD - TOXIC HAZARD	INFORMATION SHEET	1431

WARRANTY

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product. THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG. Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.



AMERLOCK® 2 VOC

LIMITATIONS OF LIABILITY

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT. The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results. This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings Products are maintained at www.ppgpmc.com. The English text of this sheet shall prevail over any translation thereof.

Packaging: Available in 2-gallon and 5-gallon kits

Product code	Description
AK2V-1	Buff Base
AK2V-3	White Base
AK2V-9	Black Base
AK2V-23	Pearl Gray Base
AK2V-72	Oxide Red Base
AK2V-81	Safety Yellow Base
AK2V-T1	Deep Tint Base *
AK2V-T2	Light Tint Base *
AK2V-T3	Neutral Tint Base *
AK2V-T5	High Hiding Yellow Tint Base *
AK2V-B	Hardener

Note: * Tintable using UCD V-Line colorants only

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Gmail

Ken Hinshaw <kenlmargarets@gmail.com>

Fwd: Point Pinos Lighthouse

2 messages

Ray Byrne <raybconstruction@gmail.com>

Sat, May 1, 2021 at 6:54 AM

To: Henshaw Ken <kenl@redshift.com>, Northrup Lowell <lowellnor@aol.com>, Hinshaw Ken <kenlmargarets@gmail.com>

Ray Byrne

Begin forwarded message:

From: Mark Dietrich <mark@nsa-llp.com>

Date: April 30, 2021 at 4:32:27 PM PDT

To: Ray Byrne <raybconstruction@gmail.com>

Cc: Mark Dietrich <mark@nsa-llp.com>, Brian Neumann <brian@nsa-llp.com>, Jamie Rees <jamie@ramingdependent.com>

Subject: Point Pinos Lighthouse

Hi Ray,

Prior to our arrival it would be beneficial if the big spall on the underside of the concrete support was patched and flush with adjacent surfaces. Either of the following products are appropriate to complete the repair: Aquafin Mortar V/O CI or SikaQuick VOH. Both of these are repair mortars that are formulated for overhead repair work. If mixed correctly they will adhere to the existing concrete. Pay attention to the depth of the lift or thickness of the application. You may need to apply multiple lifts with drying time between lifts to fully fill the spall.

Let me know if you have any questions regarding this repair. Note the gaps and pockets in the concrete above the large spall must be filled with concrete or non shrink grout to provide a solid uniform surface for primer and membrane application.



Best,

Mark Dietrich, AIA
Project Architect
Neumann Sloat Arnold Architects, Inc.

329 Jefferson Street Oakland CA 94607

Office: 415 578 4800 Ext 106
Mobile: 408 504 2652

mark@nsa-ip.com
www.nsa-ip.com

Please consider the environment before printing this email.

LOWELL NORTHROP <lowellnor@aol.com>
To: Ken Hinshaw <kenlmargarets@gmail.com>

Sat, May 1, 2021 at 12:57 PM

Sent from my iPhone

Begin forwarded message:

From: Ray Byrne <raybconstruction@gmail.com>
Date: May 1, 2021 at 6:54:34 AM PDT
To: Henshaw Ken <ken@redshiff.com>, Northrup Lowell <lowellnor@aol.com>, Hinshaw Ken <kenlmargarets@gmail.com>
Subject: Fwd: Point Pinos Lighthouse

[Quoted text hidden]



Ken Hinshaw <kenlmargarets@gmail.com>

<EXT>Lighthouse panels + floor

1 message

Wed, Jul 17, 2019 at 2:36 PM

Mark Velazquez <MVelazquez@kellymoore.com>
To: "kenlmargarets@gmail.com" <kenlmargarets@gmail.com>
Cc: "fordpainipg@att.net" <fordpainipg@att.net>

alvin

Hello Ken, I'm forwarding you our specifications for your steel and floor project at Point Pinos Lighthouse. I also attached the data sheets here.

Let me know if you have any questions. Thank you!

From: Watts, Ronald [mailto:rwatts@ppg.com]
Sent: Monday, July 15, 2019 11:19 AM
To: Ramirez, Cece
Cc: Mark Velazquez
Subject: RE: <EXT>Lighthouse panels + floor

Thanks Cece

I see where it says it will be new galvanized steel. That is the one you need to pay attention to. Make sure that the galvanized steel is not passivated (Chromate dip) – you can find that out from the galvanizers. If it is it will need cleaned and abraded to Sp-16 attached – otherwise the paint won't stick.

In any case – I would suggest that the steel is all cleaned (SSPC SP-1 – use DuraPrep 88) and abraded; hand or power tool prep (SSPC SP-2 and SP-3) to roughen and provide a dull rough substrate for material to bond.

• Then you can use epoxy – You can go with Amerlock 2 VOC – apply 2 full coats. Make sure you brush apply at all edges, bolts, connections, corners, voids, crevices etc.. to assure material is worked into these areas and steel is covered. These areas are the ones you see in the photo that are rusted – real common.

7/25/2019

Gmail - <EXT>Lighthouse panels + floor

You can add a primer coat of Amerlock sealer as well at 2 mils DFT if you would like – it's an extra step but does a great job on rusty areas that are difficult to prep.

After the 2 coats of epoxy you can use PSX 700 or 800 at 4-6 mils, Amershield VOC at 3-6 mils, or Durethane at 3-5 mils as a topcoat. For the walking surface, you can add skid-tex to the finish material or you can broadcast a non-skid aggregate into the 2nd epoxy coat, let that dry, sweep off any excess and lock it down with the topcoat. That should do the trick.

So:

- Prepare – Clean and Abrade - solvent clean SP-1 and roughen
- Pre-prime **Option** – Amerlock Sealer at 1-2 mils DFT ~ 100 G/l voc
- 1st full coat epoxy – Amerlock 2 VOC at 4-8 mils DFT (Brush apply at all edges, etc..) <100 VOC
- 2nd Coat Epoxy – Amerlock 2 VOC at 4-8 mils (Broadcast non-skid at walking surfaces)
- Finish Coat – PSX 700 or 800, Amershield VOC or Durethane The PSX and Amershield are <100 VOC

Call or e-mail for questions or to discuss further. I attached standards and some product data

Thanks

Ron

541-221-7017

From: Ramirez, Cece <Cece.Ramirez@ppg.com>
Sent: Monday, July 15, 2019 10:11 AM
To: Watts, Ronald

<https://mail.google.com/mail/u/0?ik=4d30746017&view=pt&search=all&permthid=thread-f%3A1639343103066916349&siml=msg-f%3A1639343103066916349>

7/25/2019

Gmail - <EXT>Lighthouse panels + floor

Cc: mvelazquez@kellymoore.com

Subject: FW: <EXT>Lighthouse panels + floor

Hello Ron,

Please take a look at the attachments for a new opportunity with Mark's customer. The questionnaire is an attachment.

Thank you!

Cece Ramirez

Business Development Manager

US Dealer

PPG

Pacific Region

East Bay - SF Bay

M: 707.372.6901

E: cece.ramirez@ppg.com

ppg.com



From: Mark Velazquez <MVelazquez@kellymoore.com>

Sent: Monday, July 15, 2019 9:52 AM

<https://mail.google.com/mail/u/0?ik=4d30746017&view=pt&search=all&permthid=thred-f%3A1639343103066916349&siml=msg-f%3A1639343103066916349>

7/25/2019

Gmail - <EXT>Lighthouse panels + floor

To: Ramirez, Cece
Subject: <EXT>Lighthouse panels + floor

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hey Cece! So everything turned out great with the Point Pinos Lighthouse roof (I'll send photos soon). Now, my customer wants a product(s) recommendation for the metal panels and floors for the same lighthouse. I attached pictures of the substrates here plus the survey questions.

The floors already have a worn out coating that will be cleaned and prepped for something new. And also both the panels and floors will be black in color.

Let me know if you have any questions.

Thank you!

-----Original Message-----

From: Mark Velazquez

Sent: Monday, July 15, 2019 9:19 AM

To: Mark Velazquez

Subject: Lighthouse panels + floor

Disclaimer

Kelly-Moore Paint Company, Inc. CONFIDENTIALITY NOTICE - This transmission is intended for the sole use of the individual and/or entity to whom it is addressed, and may contain information and/or attachments that are privileged, confidential and exempt from disclosure under applicable law. If the reader of this transmission is not the intended recipient, you are hereby notified that any disclosure, dissemination, distribution, duplication, or the taking of any action in reliance on the contents of this transmission by someone other than the intended addressee or its designated agent is strictly prohibited. If your receipt of this transmission is in error, please notify sender by replying immediately to this transmission and destroy the transmission. Thank You.

7 attachments

 **SSPC-SP_16_PDF.pdf**
191K

 **SP1.28236.pdf**
56K

 **SP3.28272.pdf**
62K

 **Amerlock Sealer PDS.pdf**
273K

 **Amerlock 2 PDS.pdf**

<https://mail.google.com/mail/u/0/?ik=4d30746017&view=p1&search=all&permthid=thread-f%3A1639343103066916349&siml=msg-f%3A1639343103066916349>



A Chase Corporation Company
23 Elm St., Peterborough, NH 03458
Tel: (800) 543-3458 (603) 924-9481
Fax: (603) 924-9482
Web site: www.cimindustries.com

CIM IG-8
07/10

Instruction Guide MIXING CIM PREMIX AND ACTIVATOR

It is critical that the appropriate amount of CIM Activator be mixed with the appropriate amount of CIM Premix. Therefore, each CIM product comes packaged with pre-measured quantities of Activator and Premix. Each pre-measured container has a color coded label in order to assist with identifying the appropriate Premix and Activator. One gallon cans of Premix are to be mixed with the appropriate bottle of Activator, and five gallon pails of Premix are to be mixed with the appropriate jugs of Activator. **One and only one bottle/jug of activator must be used for each can/pail of premix product.**

A ½" drill (at least 5 amp and 500-900 rpm) and appropriate mixing paddle should be used to mix all CIM products. One (1) gallon cans should be mixed with a 3" spiral blade (see Figure 1), and five (5) gallon pails with an 8" mud mixer (see Figure 2). All products are to be mixed for three (3) minutes. To assure proper and thorough mixing with minimal manpower, C.I.M. Industries recommends using a Mixing Jig and Timer for all jobs. When using a Mixing Jig, cut the mixing paddle shaft so that bottom of paddle is between one quarter inch and three quarter inches from the bottom of the pail. Different CIM Premix products may have different pail heights.

- Fan blade or rod style mixers shall not be used! (see Figure 3)
- spiral mixers may be used for one (1) gallon cans only. (see Figure 1)
- Never mix CIM products by hand!
- **Mixing Jigs should not** be used on CIM 1000 Trowel Grade.
- **Do not thin!** If material is too viscous, it should be warmed to 75°F to 95°F.
- Do not mix water or air into the pail!
- CIM Activator is not a catalyst! Do not add more or less than one bottle of Activator to each pail of Premix! Changing the mix ratio will not affect cure times but will alter coating or liner performance.
- Keep Premix and Activator at 75°F to 95°F for lower viscosity and easy mixing.

Figure 1
Mixer for 1 Gallon Kits



Figure 2
Mixer for
5 Gallon Units

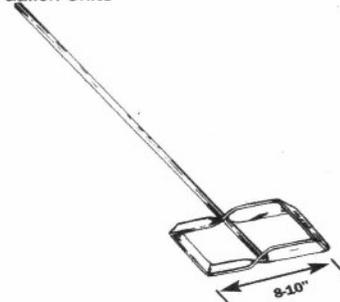
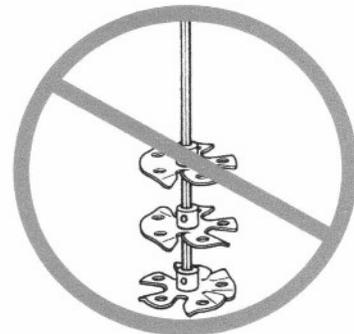
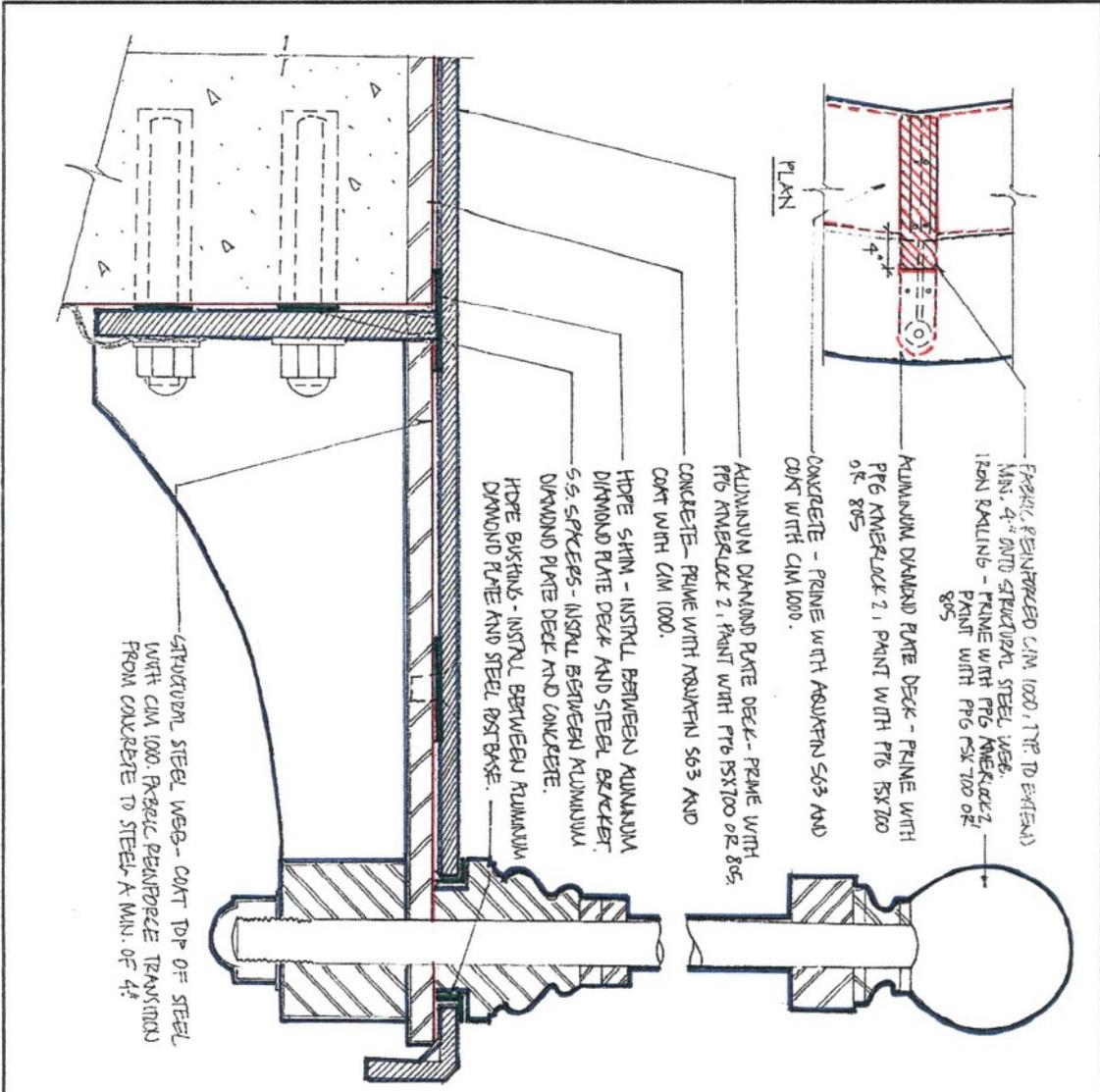


Figure 3



www.cimindustries.com

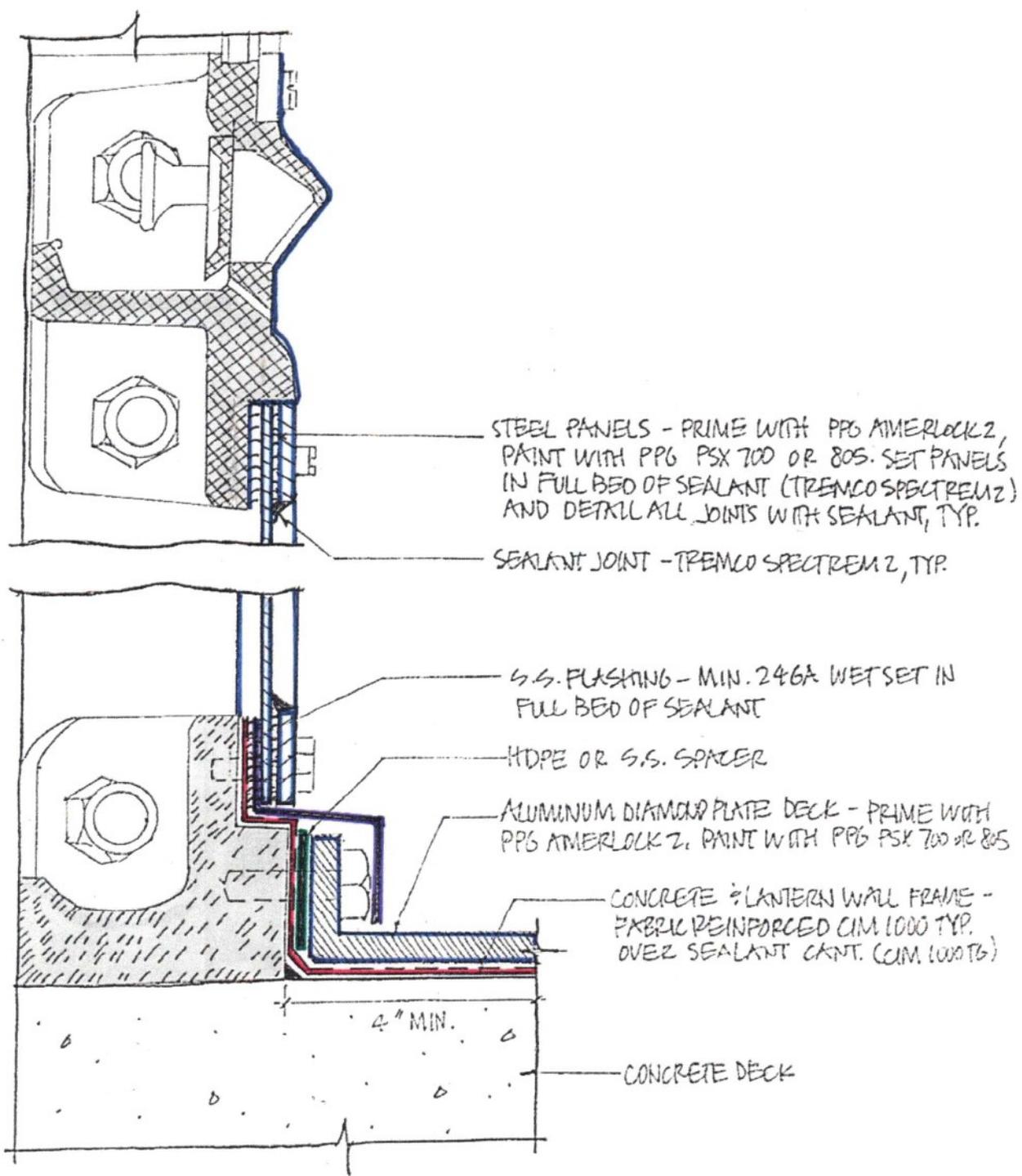
Printed on
PaperTyger
Tear Resistant Paper



OF SHEETS	FILE:	ISSUE			Title: GALLERY RAIL POST & DECK BRACKET COATING DETAIL
	BY: MD	No.	DATE	DESCRIPTION	
	PROJ NO: 19098				
	SCALE: N.T.S.				
SKW-1					Project: POINT PINOS LIGHTHOUSE

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Proj No: 19098
Date: 19.09.27
By: MD
Scale: N.T.S.

Title:
LANTERN WALL SECTION FLASHING

Project:
POINT PINOS LIGHTHOUSE

Sheet:
SKW-2



SSPC: The Society for Protective Coatings

SURFACE PREPARATION SPECIFICATION

SSPC-SP 16

**Brush-Off Blast Cleaning of Coated and Uncoated
Galvanized Steel, Stainless Steels, and Non-Ferrous Metals**

Foreword

This standard covers surface preparation of coated or uncoated metal surfaces other than carbon steel prior to the application of a protective coating system. Surface preparation using this standard is used to uniformly roughen and clean the bare substrate and to roughen the surface of intact coatings on these metals prior to coating application. Substrates that may be prepared by this method include, but are not limited to, galvanized surfaces, stainless steel, copper, aluminum, and brass. For the purpose of this standard, the zinc metal layer of hot-dip galvanized steel is considered to be the substrate, rather than the underlying steel. This standard is not to be used for cleaning coated or uncoated carbon steel substrates. Five different standards are available for cleaning carbon steel: White Metal Blast Cleaning¹, Near-White Metal Blast Cleaning², Commercial Blast Cleaning³, Industrial Blast Cleaning⁴, and Brush-Off Blast Cleaning⁵. This standard is intended for use by coating specifiers, applicators, inspectors, or others who may be responsible for defining a standard degree of surface cleanliness.

This standard represents a degree of cleaning that is similar to that defined for carbon steel substrates in SSPC-SP7/NACE No. 4 except that a minimum surface profile depth on the bare metal surface is required.

1. Scope

1.1 This standard covers the requirements for brush-off blast cleaning of uncoated or coated metal surfaces other than carbon steel by the use of abrasives. These requirements include visual verification of the end condition of the surface and materials and procedures necessary to achieve and verify the end condition.

1.2 Information about the function of brush-off blast cleaning as defined in SP 16 is in Paragraph A1 of Appendix A.

2. Definitions

2.1 A brush-off blast cleaned non-ferrous metal surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, metal oxides (corrosion products), and other foreign matter. Intact, tightly adherent coating is permitted to remain. A coating is considered tightly adherent if it cannot be removed by lifting with a dull putty knife. Bare metal substrates shall have a minimum profile of 19 micrometers (0.75 mil).

2.1.1 The entire surface shall be subjected to the abrasive blast to achieve the specified degree of cleaning and to produce a dense and uniform surface profile on the bare metal substrate. The peaks and valleys on the surface shall form a continuous pattern, leaving no smooth, unprofiled areas. Tightly adherent coating is permitted to remain. A coating is considered tightly adherent if it cannot be removed by lifting with a dull putty knife.

2.1.2 Intact coatings that are present shall be roughened and cleaned as specified in the procurement documents. If the surface profile is not specified in the procurement documents, the abrasive selected shall roughen the cleaned surface to the degree required by the product data sheet for the coating to be applied.

2.1.3 Immediately prior to coating application, the entire surface shall comply with the degree of cleaning as specified herein.

3. Associated Documents

3.1 Documents cited in the mandatory sections of this standard include:

Document	Title
SSPC-SP 1 ⁶	Solvent Cleaning
ASTM D 4285 ^{(1),7}	Standard Test Method for Indicating Oil or Water in Compressed Air

⁽¹⁾ ASTM International (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959

ASTM D 4417 ^{(2),8}	Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
ASTM D 7127 ⁹	Standard Test Method for Measurement of Surface Roughness of Abrasive Blast Cleaned Metal Surfaces Using a Portable Stylus Instrument
ASTM D 7393 ¹⁰	Method for Indicating Oil in Abrasives

3.2 The latest issue, revision, or amendment of the documents listed in Paragraph 3.1 in effect on the date of invitation to bid shall govern unless otherwise specified.

3.3 If there is a conflict between the requirements of any of the documents listed in Paragraph 3.1 and this standard, the requirements of this standard shall prevail.

4. Procedures Before Brush-Off Blast Cleaning of Non-Ferrous Metal Surfaces

4.1 Before blast cleaning of non-ferrous metal surfaces, visible deposits of oil, grease, or other contaminants that would interfere with coating adhesion shall be removed in accordance with SSPC-SP 1 or other specified methods.

4.2 Surface imperfections shall be corrected to the extent specified in the procurement documents (project specifications). Additional information on surface imperfections is in Paragraph A2 of Appendix A.

4.3 Unique Requirements for Preparation of Galvanized Steel

4.3.1 Before blast cleaning, galvanized surfaces shall be checked for the presence of "wet storage stain." Blast cleaning shall not be used to remove wet storage stain. The "dwell time" necessary for the blast stream to remove wet storage stain can damage the galvanized surface. Additional information on the removal of wet storage stain is in Paragraph A3 of Appendix A. Additional information on blast cleaning galvanized steel is in Appendix A9.

4.3.2 Unless written documentation exists to confirm that a galvanized surface is known to be free of chromates or other passivating treatments, representative areas of galvanized surfaces that will be coated shall be tested as described in Section 4.3.3 for the presence of chromates or other passivating treatments before brush-off blast cleaning is performed. If chromates or other passivating treatments are detected, the surface shall be retested after blast cleaning to confirm complete removal. OSHA requirements for worker protection from toxic metals may apply. Additional information on heavy metal toxicity is in Paragraph A4 of Appendix A.

4.3.3 Test for Presence of Passivating Treatments on Galvanizing (e.g., Chromating): "Chromating" refers to the treatment of galvanized parts to prevent the occurrence of wet storage stain. Most sheet metal and coil stock used to fabricate decking and curtain wall receives chromating treatments. The presence of chromates or other passivating treatments is detected by using a solution of copper sulfate, with the following procedure:

1. Ensure that surfaces are free of any visible oxidation or oxidation by-products
2. Prepare the solution by dissolving 2 grams of copper sulfate crystals in 100 ml of deionized water.
3. Mark off three adjacent areas on the galvanized part, approximately 6.45 cm² (1 inch²)
4. Leave one area untouched, solvent wash the second and third areas, and also thoroughly sand the third area using emery paper.
5. Using an eyedropper or pipette, saturate a cotton swab with the copper sulfate solution and apply to all three areas, or apply the solution directly to the three areas.

If all three areas turn black immediately, there is no passivation on the surface. If the first area does not turn black within 10 seconds and the second and third areas turn black immediately, there is no passivation on the surface with the possible exception of light oil. If the first and second areas do not turn black within 10 seconds and the third area turns immediately, a passivator of some type is present.

5. Blast Cleaning Methods and Operation

5.1 Clean, dry compressed air shall be used for nozzle blasting. Cleanliness of the compressed air shall be verified in accordance with the procedure described in ASTM D 4285. Moisture separators, oil separators, traps, or other equipment may be necessary to achieve this requirement.

5.2 Any of the following methods of surface preparation may be used to brush-off blast clean a non-ferrous metal substrate, but the presence of toxic metals in the abrasives or coating being removed can place restrictions on the methods of cleaning permitted. The chosen method shall comply with all applicable regulations.

5.2.1 Dry abrasive blasting using compressed air, blast nozzles, and abrasive.

5.2.2 Dry abrasive blasting using a closed-cycle, recirculating abrasive system with compressed air, blast nozzle, and abrasive, with or without vacuum for dust and abrasive recovery.

5.2.3 Dry abrasive blasting using a closed-cycle, recirculating abrasive system with centrifugal wheels and abrasive.

⁽²⁾ Although ASTM D 4417 is written for blast-cleaned steel, the methods are suitable for use on non-ferrous metals.

5.2.4 When specified, other methods of surface preparation (such as wet abrasive blast cleaning) may be used to brush-off blast clean non-ferrous metal surfaces. Additional information on cleaning soft and thin substrates is in Paragraphs A5, A6, and A7 of Appendix A. Additional information on the use of wet abrasive blast cleaning to clean galvanized surfaces is in Paragraph A9.3 of Appendix A.

6. Abrasives for Brush-Off Blast Cleaning of Non-Ferrous Metal Substrates

6.1 The selection of abrasive size and type shall be based on the type, grade, and surface condition of the surface to be cleaned, the type of blast cleaning system used, the finished surface to be produced (cleanliness and surface profile [roughness]), and whether the abrasive will be recycled.

6.2 The cleanliness and size of recycled abrasives shall be maintained to ensure compliance with this standard.

6.3 The blast cleaning abrasive shall be dry and free of oil and grease, as determined by ASTM D 7393.

6.4 The abrasive shall comply with any limitations or special requirements stipulated by the procurement documents. Abrasive embedment and abrasives containing contaminants may not be acceptable for some service requirements. Additional information on abrasive selection is in Paragraphs A8 and A8.1 of Appendix A.

6.5 The abrasive material shall produce a dense and uniform profile acceptable for application of the intended coating. After cleaning, the cleaned metal surface shall have a minimum 19-micrometer (0.75 mil) profile, measured in accordance with ASTM D 4417 or ASTM D 7127. If present, intact tightly adherent coating shall be roughened as specified in the procurement documents (project specification). If the surface profile is not specified in the procurement documents, the abrasive selected shall roughen the cleaned surface to the degree required by the product data sheet for the coating to be applied.

7. Procedures Following Brush-Off Blast Cleaning and Immediately Prior to Coating

7.1 Visible deposits of oil, grease, or other contaminants shall be removed as required by SSPC-SP 1, or as specified.

7.2 Dust, dirt and loose residues shall be removed from prepared surfaces by brushing; blowing off with clean, dry air; vacuum cleaning; or other specified methods.

7.3 Removal of chromates or other passivating treatments detected on galvanized surfaces (see Section 4.3.2) shall be confirmed before coating application, using the procedure in Section 4.3.3.

7.4 Immediately prior to coating application, the entire surface shall comply with the degree of cleaning specified in this standard.

8. Disclaimer

8.1 While every precaution is taken to ensure that all information furnished in SSPC standards and specifications is as accurate, complete, and useful as possible, SSPC cannot assume responsibility nor incur any obligation resulting from the use of any materials, coatings, or methods specified herein, or of the specification or standard itself.

8.2 This specification does not attempt to address all problems concerning safety and health associated with its use. The user of this specification, as well as the user of all products or practices described herein, is responsible for instituting appropriate health and safety practices and for ensuring compliance with all governmental regulations.

References

1. SSPC-SP 5/NACE No. 1 (latest revision), White Metal Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
2. SSPC-SP 10/NACE No. 2 (latest revision), Near-White Metal Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
3. SSPC-SP 6/NACE No. 3 (latest revision), Commercial Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
4. SSPC-SP 14/NACE No. 8 (latest revision), Industrial Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
5. SSPC-SP 7/NACE No. 4 (latest revision), Brush-Off Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
6. SSPC-SP 1 (latest revision), Solvent Cleaning (Pittsburgh, PA: SSPC).
7. ASTM D 4285 (latest revision), Standard Test Method for Indicating Oil or Water in Compressed Air (West Conshohocken, PA: ASTM International).
8. ASTM D 4417 (latest revision), Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel (West Conshohocken, PA: ASTM International)
9. ASTM D 7127 (latest revision), Standard Test Method for Measurement of Surface Roughness of Abrasive Blast Cleaned Metal Surfaces Using a Portable Stylus Instrument (West Conshohocken, PA: ASTM International)
10. ASTM D 7393 (latest revision) Method for Indicating Oil in Abrasive
11. Code of Federal Regulations, Title 29 Part 1926.1126 (Chromium VI)
12. ASTM B 6 (latest revision), Standard Specification for Zinc (West Conshohocken, PA: ASTM International)
13. Code of Federal Regulations, Title 29 Part 1926.62 (Lead)

14. ASTM D 1730 (latest revision), Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting (West Conshohocken, PA: ASTM International)
15. SSPC-SP COM (latest revision), Surface Preparation Commentary for Steel and Concrete Substrates (Pittsburgh, PA: SSPC)
16. SSPC-AB 1 (latest revision), Mineral and Slag Abrasives (Pittsburgh, PA: SSPC).
17. SSPC-AB 2 (latest revision), Cleanliness of Recycled Ferrous Metallic Abrasives (Pittsburgh, PA: SSPC).
18. SSPC-AB 3 (latest revision), Ferrous Metallic Abrasives (Pittsburgh, PA: SSPC).
19. SSPC-AB 4 (latest revision), Recyclable Encapsulated Abrasive Media (Pittsburgh PA: SSPC).
20. ASTM A 123 (latest revision), Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products (West Conshohocken, PA: ASTM International)
21. ASTM A 153 (latest revision), Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware (West Conshohocken, PA: ASTM International)
22. ASTM A 780 (latest revision), Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings (West Conshohocken, PA: ASTM International)
23. ASTM D 6386 (latest revision), Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting (West Conshohocken, PA: ASTM International)

Nonmandatory Appendix A: Explanatory Notes

A1 FUNCTION: This standard provides a degree of cleaning for non-ferrous metal substrates comparable to or greater than brush-off blast cleaning (SSPC-SP 7/NACE No. 4) of carbon steel. It is used to clean and roughen coated and uncoated metal surfaces (other than carbon steel), typically associated with the application of a protective coating system. The primary functions of brush-off blast cleaning of non-ferrous metal substrates before coating are (a) to remove material from the surface that can cause early failure of the coating and (b) to obtain a suitable surface profile (roughness) to enhance the adhesion of the new coating system.

A2 SURFACE IMPERFECTIONS: Surface imperfections can cause premature failure when the service is severe. Coatings tend to pull away from sharp edges and projections, leaving little or no coating to protect the underlying surface. Other features that are difficult to properly cover and protect include crevices, weld porosities, laminations, etc. The high cost of the methods to remedy surface imperfections requires weighing the benefits of edge rounding, weld spatter removal, etc., versus a potential coating failure.

A3 WET STORAGE STAIN: Wet storage stain is the whitish zinc corrosion product that forms when galvanized

parts are exposed to moist air without sufficient air circulation between the parts. Wet storage stain will reduce the adhesion of subsequently applied coatings, possibly resulting in coating delamination. Using a nylon brush and rinsing with water may remove light cases of wet storage stain. More severe cases with thick deposits may be removed by brushing with a dilute solution of acetic or citric acid. Surface contact time should be less than four minutes. Lime juice and white vinegar have been found to be effective cleaners.⁽³⁾ Immediately after brushing, the cleaned areas should be rinsed with a large amount of water.

A4 TOXICITY: The presence of toxic substances in the abrasive or material being removed may place restrictions on the methods of cleaning permitted. If chromates are present, requirements of 29 CFR 1926.1126 (hexavalent chromium [chromium VI])¹¹ for worker protection may apply. ASTM B 6¹² lists five grades of zinc containing various levels of lead ranging from 0.003% to 1.4%. Depending on the grade of zinc used by the galvanizer, abrasive blast cleaning of the galvanized surface may also require compliance with Code of Federal Regulations,⁽⁴⁾ Title 29 part 1926.62 (Lead).¹³

A5 EROSION OF SOFT METAL SUBSTRATES: When performing brush-off blast cleaning of soft metals such as aluminum, copper, and brass, care should be taken to avoid erosion of the metal substrate. Examples of techniques that may reduce the risk of erosion include the use of softer abrasives, lower nozzle pressures, and increased stand-off distances.

A6 DEFORMATION OF THIN METAL SUBSTRATES: Metal parts less than about 20 gauge in thickness may deform during brush-off blast cleaning. Deformation of thin metal substrates may be prevented by reducing the blast pressure and moving the blast nozzle rapidly across the surface being roughened and cleaned.

A7 BRUSH-OFF BLAST CLEANING ALUMINUM, COPPER, BRASS AND STAINLESS STEEL: Brush-off blast cleaning may not remove stains that could be detrimental to a paint system. If stains are still present after brush-off blast cleaning, they should be removed by spot cleaning, power brushing, or orbital sanding using stainless steel wire brushes, or stainless steel abrasive pads, followed by repeat brush-off blast cleaning if necessary to provide the desired profile.

When brush-off blast cleaning aluminum, the protective oxide layer is removed. A high performance coating system will improve the corrosion protection of the metal.

Additional information on the preparation of aluminum and aluminum alloys for painting can be found in ASTM D 1730.¹⁴

⁽³⁾ B. Duran and T. Langill, "Cleaning Wet Storage Stain from Galvanized Surfaces," in *Galvanizing Notes*, October 22, 2007. (Centennial, CO: American Galvanizers Association).

⁽⁴⁾ The U.S. Code of Federal Regulations may be accessed online at <http://www.access.gpo.gov/nara/cfr/cfr-table-search.html>.

A8 ABRASIVE SELECTION AND USE: Types of metallic and non-metallic abrasives are discussed in the Surface Preparation Commentary (SSPC-SP COM).¹⁵ It is important to recognize that blasting abrasives may become embedded in or leave residues on the surface during preparation. Embedment can be detrimental (for example, ferrous metallic abrasives on stainless steel or aluminum). Carbon steel and chilled iron abrasives should not be used on stainless steel substrates, or when chemistry of the embedded abrasive could cause halogen-induced stress corrosion cracking or liquid metal embrittlement. Care should be taken to ensure that the abrasive is free from detrimental amounts of water-soluble, solvent-soluble, acid-soluble, or other soluble contaminants (particularly if the prepared surface is to be used in an immersion environment). Criteria for selecting and evaluating some types of abrasive media are given in SSPC-AB 1, AB 2, AB 3 and AB 4.^{16, 17, 18, 19} Other media may also be suitable (see A8.1.1).

A8.1 Abrasive Size and Hardness: The size and hardness of abrasive media selected for brush-off blasting of non-ferrous metal substrates should be based on surface profile requirements. Abrasives in the size range 35 to 70 mesh having a Mohs hardness of 5 or less will generally perform well for cleaning substrates such as galvanized steel, aluminum, brass, and copper. Harder abrasives are typically required for stainless steel.

A8.1.1 Softer abrasives are frequently used to prevent deformation of thin sheets of metal during blast cleaning. Some materials that have been found to be suitable include, but are not limited to aluminum/magnesium silicate, soft mineral sands, soft crushed glass and glass bead media, and organic media such as corncobs or walnut shells.

A8.2 Air Pressure: Relatively low nozzle pressures should be used for aluminum, copper, and galvanized steel to reduce the risk of damage to the substrate. Higher pressures are more suitable for stainless steel.

A9 BRUSH-OFF BLAST CLEANING GALVANIZED STEEL

A9.1 Thickness of Zinc on Galvanized Steel: The zinc layers should remain intact during brush-off blast cleaning. The rate of cleaning is typically 110 m² per hour (1200 ft² per hour) or greater. It is recommended that the thickness of new galvanizing be measured before and after brush-off blast cleaning using measurement techniques described in SSPC-PA 2 to confirm that it still conforms to ASTM A123 or ASTM A153A/153M, as applicable. Any areas with insufficient thickness should be repaired in accordance with ASTM A 780.^{20,21,22}

A9.1.1 For some complicated shapes, a reduction in galvanizing thickness may be difficult to avoid. A mock-up or test area should be abrasive blasted to determine if excessive zinc is removed. If this is the case, consideration should be given to replacing the zinc (e.g. spot applications of an organic zinc-rich primer) or alternative measures of surface preparation such as zinc phosphate treatment may be used. These methods are beyond the scope of this standard.

A9.2 Zinc Oxides: Newly exposed zinc surfaces will oxidize rapidly, especially in the presence of moisture. During brush-off blast cleaning and subsequent painting of galvanized steel, the surface temperature should be a minimum of 3 °C (5 °F) above the dew point, in order to retard the formation of zinc oxides. To limit the amount of zinc oxide on the cleaned surface, galvanizing should not be permitted to get damp after cleaning, and should be painted as soon as possible within the same work shift that the surfaces were cleaned.

A9.3 On galvanized steel surfaces, the use of wet abrasive blast cleaning can result in formation of oxides and hydroxides. Additional information on the preparation of galvanized steel for painting can be found in ASTM D 6386.²³