Philadelphia Coatings LLC
Americas Office: 6 Georgian Row, The Woodlands, Texas, TX 77380, USA
Tel: +1 832-948-5588
E-mail: info@philacoatings.com
Website: philacoatings.com

Product Data Sheet

"PHILA SILOXANE PSL"

Product Information

PhilaSiloxane is a high performance, two-component, high solids epoxy siloxane coating that combines the properties of both a high performance epoxy and a polyurethane in one coat. Plus, it is free from isocyanates.

Special features:

- Replaces a two-coat epoxy/polyurethane system
- High-gloss, self-priming coating
- Long term color and gloss performance
- Corrosion and chemical resistant
- High solids, VOC compliant
- Outstanding application properties

PhilaSiloxane displays very good compatibility with various well-known producers.

Recommended Purpose

For use on prepared steel surfaces in industrial environments, including:

- Structural steel
- Tank exteriors
- Piping
- Industrial power plants
- Transportation
- Marine
- Conforms to AWWA D102 OCS #5
- Can be applied directly over inorganic zincs
- Suitable for use in USDA inspected facilities

Recommended Systems

Steel:

1-2 cts. PhilaSiloxane 75 – 175 mm (3.0 – 7.0 mils)

One coat acceptable in "light" industrial environments 125 – 175 mm (5.0 – 7.0 mils)

Steel:

1 ct. PhilaZinc 50 – 100 mm (2.0 – 4.0 mils)

1-2 cts. PhilaSiloxane 75 – 175 mm (3.0 – 7.0 mils)

Galvanized:

1 ct. PhilaDur 125 – 175 mm (5.0 – 7.0 mils)

1-2 cts. PhilaSiloxane 75 – 175 mm (3.0 – 7.0 mils)

Aluminum:

1 ct. PhilaDur 125 – 175 mm (5.0 – 7.0 mils)

1-2 cts. PhilaSiloxane 75 – 175 mm (3.0 – 7.0 mils)

Aluminum:

1-2 cts. PhilaSiloxane 75 – 175 mm (3.0 – 7.0 mils)

Masonry:

1 ct. PhilaDur 250 – 500 mm (10.0 – 20.0 mils)

1-2 cts. PhilaSiloxane 75 – 175 mm (3.0 – 7.0 mils)

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.

Minimum recommended surface preparation:

Substrate	Minimum	Recommended
Carbon steel	St 2 (ISO 8501-1)	Sa 2 (ISO 8501-1)
Stainless steel	The surface shall be hand or machine abraded with non-metallic abrasives or bonded fibre machine or hand abrasive pads to impart a scratch pattern to the surface and to remove all polish from the surface.	Abrasive blast cleaning to achieve a surface profile using non-metallic abrasive media which is suitable to achieve a sharp and angular surface profile.
Galvanised steel	The surface shall be clean, dry and appear with a rough and dull profile.	Light brush blasting using nonmetallic abrasive leaving a clean, rough and even pattern.
Coated surfaces	Clean, dry and undamaged compatible coating (ISO 12944-4 6.1.4)	Clean, dry and undamaged compatible coating (ISO 12944-4 6.1.4)
Concrete	Low pressure water washing to a rough, clean, dry and laitance free surface.	Minimum 4 weeks curing. Moisture content maximum 5 %. Prepare the surface by means of enclosed blast shot or diamond grinding and other appropriate means to abrade the surrounding concrete and to remove laitance.

Optimum performance, including adhesion, corrosion protection, heat resistance and chemical resistance is achieved with recommended surface preparation. For other surface treatments, please consult with Philadelphia Coatings LLC.

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Physical Properties

Sheen: Gloss

Colors: Red Brown, Gray, Green, Moss Green, Signal Red, Yellow, Orange, Blue, Black, White, Silver, Aluminum

Volume Solids (%): 80 ± 2

Mass density: 1.38 kg/Lit (11.3 lb/gal)

Recommended Film Thickness: 75 – 175 microns dry (3.0-7.0 mils) per coat

Theoretical Spreading rate: 6.40 m^2/lit for 125 microns (289 ft^2/gal for 5.0 mils)

Flash Point: 54°C (130°F)

VOC: max. 239.0 g/lit

EPA method 24: 0.7 lb/gal (84.0 g/lit) material as into the container

ASTM D412 for Elongation and Tensile Strength

ASTM D4060 for Abrasion Resistance

Application Data

Mixing Ratio: Base 4 part per/volume, Curing Agent 1 part/volume.

Readiness Time: 15 minutes in a proper temperature.

Application Conditions: Temperature (air, surface and material): 4.5°C (40°F) minimum, 49°C (120°F) maximum

At least 2.8°C (5°F) above dew point

Relative humidity: 40% minimum, 85% maximum

Painting Method: 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.

Air spray

Gun .....Binks 95

Tip and needle 67/667

Air cap 67PB

Atomization Pressure .....60 psi

Fluid Pressure .....20 psi

Reduction .....Not Recommended

Additional thinner may be required. Recommended Thinner for epoxy PH 300. Volume of thinner 5-10% depending on required thickness and application conditions.

Airless spray

Unit.....30:1 pump

Pressure.....2800-3000 psi

Hose.....3/8" ID

Tip .....017" - .021"

Filter .....60 mesh

Reduction .....Not Recommended

Additional thinner may be required. Recommended Thinner for epoxy PH 300. Volume of thinner 0-5% depending on required thickness and application conditions.

Roller

Brush.....Natural bristle

Reduction .....Not Recommended

Brush

Cover .....3/8" woven with solvent resistant core

Reduction .....Not Recommended

Use proper equipment. Actual safety measures and precautions are very important from the selected method and environment work. Emergency Contact Numbers are available World Wide upon any request.

Cleaning: Power tool cleaning and Cleaners with Thinner for epoxy PH 300.

Pot Life: ± 4 hours at 20°C (68°F)

Note: Pot life will be shorter with higher temperatures and larger volumes of material.

Curing Time: Within 7 days at 23°C (fully cured).

Drying and Over coating Conditions

Temperature of basis material	10℃	23℃	30℃
Touch Dry	**2 hours**	**1 hour**	**30 minutes**
Hard Dry	**16 hours**	**4 hours**	**2 hours**
Repainting interval (Min) (1)	**16 hours**	**4 hours**	**2 hours**
Repainting interval (Max) (2)	**Always under 30 days, depends on environment temperature, best period between 2 - 7 days**		
Recoating for repairs	**Unlimited**		

(1) The given data must be considered as guidelines only. The actual drying time/times before recoating may be shorter or longer, depending on film thickness, ventilation, humidity, preceding paint system etc.

(2) The surface should be dry and free from contaminants prior to overcoating. The best intercoat adhesion is achieved when the subsequent coat is applied before the preceding coat is fully cured. After prolonged exposure it may be necessary to roughen the surface to ensure intercoat adhesion. When recoating with single pack products, maximum recoat interval is limited to 16-24 hours. When in doubt, consult with our technical dept.

Coating Specification

Long overcoat period if temperatures are around freezing point. Proper selection of the systems, coating application procedures and surface preparation are made depending on actual existing film. Best specific design factors and conditions are tested in a controlled laboratory. Consult with Philadelphia Coatings LLC Technical Department before and throughout testing process.

Surface Preparation

All surfaces should be clean, dry and free from contamination. High pressure freshwater wash should be conducted prior to the application. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.

Iron & Steel (atmospheric service)

Remove all oil and grease from surface by Solvent Cleaning per SSPC-SP1. Minimum surface preparation is Ultra High-Pressure Water Jetting for Steel per SSPC-SP12/NACE 5, WJ-3 (with existing profile) or SSPC-SP3 Power Tool Clean or SSPC-SP2 Hand Tool Clean. For better performance, use Commercial Blast Cleaning per SSPC-SP6/NACE 3. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2 mils/50 microns). Coat any bare steel the same day as it is cleaned or before flash rusting occurs.

Aluminum

Remove all oil, grease, dirt, oxide and other foreign material by Solvent Cleaning per SSPC-SP1or blast lightly.

Galvanized steel

Allow to weather a minimum of six months prior to coating. Solvent Clean per SSPC-SP1 (recommended solvent is VM&P Naphtha)
or blast lightly. 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 SSPCSP2, prime the area the same day as cleaned.

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. ASTMD4259 Standard Practice for Abrading Concrete. ASTM D4260 Standard Practice for Etching Concrete. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete. SSPC-SP 13/Nace 6 Surface Preparation of Concrete. ICRI No. 310.2R Concrete Surface Preparation.

Previously Painted surfaces

If in soundcondition, 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.
For other surface treatments, please consult with Philadelphia Coatings LLC.

Storage

Base: circa 24 months at 25°C, stored in a cool, dry, shaded and ventilated condition.
Hardener: circa 12 months at 25°C, stored in a cool, dry, shaded and ventilated condition.
The container/paint, must be kept sealed and away from heat and ignition.
In some markets commercial shelf life can be dictated shorter by local legislation. The above is minimum shelf life, thereafter the paint quality is subject to re-inspection.

Color Variation

When applicable, products primarily intended for use as primers or antifoulings may have slight color variations from batch to batch. Such products may fade and chalk when exposed to sunlight and weathering. Color and gloss retention on topcoats/finish coats may vary depending on type of color, exposure environment such as temperature, UV intensity etc., and application quality. For further information, please consult with Philadelphia Coatings LLC.

Pack Size

Basis 4 Gal. (16 Lit) drum, agent 1 Gal (3,785 Lit) drum. If other packing specifications are needed, please consult with Philadelphia Coatings LLC.

Shipping weight

Basis 4 Gal. (16 Lit) 65.44 lb drum, agent 1 Gal (3,785 Lit) 4.2 lb drum.

Health and Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information. Read carefully and conform to precautions on MSDS and packing vessels. To avoid eye and skin contact, tools such as gloves, goggles and face mask etc. should be used during work with product (proper safety measures should be taken according to construction methods and circumstances). All work with the product must be carried out according to all relevant national health, safety and environment standards and codes. This product is for professional use only.

Limitation of liability

All information is given for guidance only and is subject to regional variation depending upon local climate and environmental condition. An excessive film thickness delays the final curing and creates sagging. Over coating interval will increase with the number of paint layers and the thickness of the paint film. For recommended paints at special circumstances, please consult with Philadelphia Coatings LLC. Apply in good weather. The relative humidity must not exceed 80% temperature of the surface to be coated must be at least 3°C above the dew point. All data from the tests is obtained under lab conditions, so Philadelphia Coatings LLC won't bear any liabilities from the condition whether the data could reflect the objective status of the actual application circumstance or not.

Disclaimer

The information in the product manual is based on our experiences from tests and practice. For the application without our knowledge, we could only make sure that our products themselves are warranted. We may modify the data in this product manual according to our continuous development and experience accumulation without advanced notice.