Protective & Marine Coatings

PIPECLAD® 5000
EXTERIOR PIPELINE EPOXY

PART A	B62W560	WHITE
PART B	B62GV560	GREEN HARDENER

Revised: September 12, 2023

PRODUCT INFORMATION

4.04

PRODUCT DESCRIPTION

PIPECLAD 5000 is an ultra high solids amine cured epoxy phenolic novolac engineered specifically to deliver long term corrosion resistance and temperature resistance up to 203°F (95°C) to below grade Oil, LNG, and NGL pipelines, underground utilities, valves, and other equipment. It is formulated to provide outstanding resistance to impact, abrasion, chemical immersion, and from cathodic disbondment when used in combination with cathodic protection systems.

- Excellent cathodic disbondment resistance in ambient and elevated temperature service
- High impact and abrasion resistance
- Fast dry to backfill / return to service
- Excellent adhesion over prepared steel and FBE (fusion bonded epoxy) coated pipe
- Excellent application properties by brush, roller, broad knife, or plural component spray
- High build application: Up to 60 mils WFT in one coat
- Conveniently packaged in: cartridges, 4-gallon kits, tubs, and drum units for low waste applications on any size project

PRODUCT CHARACTERISTICS

Finish:	Gloss
Color:	Green (approximately SW4070)
Volume Solids:	99%, mixed
VOC (EPA Method 24):	<50 g/l ; 0.42 lb/gal, mixed
Mix Ratio:	3:1 by volume

Recommended Spreading Rate per coat:

	Minimum	Maximum
Wet mils (microns)	**25** (625)	**60** (1500)
Dry mils (microns)	**25** (625)	**60** (1500)
~Coverage sq ft/gal (m^2/L)	**27** (0.7)	**64** (1.6)
Theoretical coverage sq ft/gal (m^2/L) @ 1 mil / 25 microns dft	**1588** (39.0)	

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

Drying Schedule @ 30.0 mils (750 microns) wet:

	@ 35°F/2°C	@ 59°F/15°C	@ 77°F/25°C 50% RH
To backfill:	18 hours	6 hours	3 hours
To recoat:			
minimum:	18 hours	6 hours	3 hours
maximum:	24 hours	8 hours	4 hours
Cure to service:	18 hours	6 hours	3 hours

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

Sweat-in Time	None Required
Pot Life:	15 minutes

Shelf Life:	24 months, unopened Store indoors at 40°F (5°C) to 100°F (38°C).
Flash Point:	>200°F (93°C) PMCC, mixed
Clean Up:	MEK or similar

RECOMMENDED USES

For use over prepared bare steel or existing FBE coated substrates in buried service, such as:

- Buried pipelines (pipe, valves, fittings, pig launchers,...etc.)
- Underground utilities
- Girth weld coating on new installations and field tie-ins
- Maintenance or rehabilitation coating of existing lines after removal of old coatings or tape
- Spot repair/touch-up of mechanically damaged plant applied coating
- Slipbore/Horizontal directional drill (ARO)
- Shop application

PERFORMANCE CHARACTERISTICS

Substrate: Carbon steel
Surface Preparation: SSPC-SP10/NACE 2, 2.5-4.5 mil profile
System Tested: 1 ct. Pipeclad 5000 @ 30-50 mils DFT

Test Name	Test Method	Results
Abrasion	ASTM D4060	136 mg loss
Adhesion	ASTM D4541 to steel	3000* psi
Adhesion	ASTM D4541 to FBE	3344* psi
Cathodic Disbondment	CSA-Z245.30 28 days at 20°C (68°F) 80°C (176°F) 95°C (203°F)	 1.1mm @ 20°C 4.6mm @ 80°C 2.8mm @ 95°C
Direct Impact Resistance	CSA Z245.20	Pass 1.5J @-30°C
Flexibility	CSA Z245.20	Pass .75° @ 0°
Durometer Hardness	CSA Z245.30-14 and ASTM D2240	75 ± 10
Hot Water Adhesion	CSA Z245.20	Pass Rating #1 @ 75°C and 95°C

*These test samples were cured and testing conducted under laboratory conditions. Field values may vary.

Epoxy coatings may darken or yellow following application and curing.

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RECOMMENDED SYSTEMS

	Dry Film Thickness / ct. Mils	(Microns)
Prepared carbon steel:		
1 ct. Pipeclad 5000	25-60	(625-1500)
Overcoat of shop applied FBE: (cleaned and abraded)		
1 ct. Pipeclad 5000	25-60	(625-1500)
Horizontal Directional Drill (ARO):		
1 ct. Pipeclad 5000	50-70	(1250-1750)

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

SAFETY PRECAUTIONS

Refer to the SDS sheet before use.

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

DISCLAIMER

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WARRANTY

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

SURFACE PREPARATION

Surface must be clean, dry, and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion. Refer to Application Bulletin on Page 3 for detailed surface preparation information.

Minimum Recommended Surface Preparation*:

SSPC-SP10/NACE #2 Near White Blast Cleaning, 2.5-4.5 mil (64-114 micron) blast profile

*For coating repair and girth weld applications, refer to the Application Bulletin on Page 3 for detailed surface preparation information.

Surface Preparation Standards

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

TINTING

Do not tint.

APPLICATION CONDITIONS

Temperature: 35°F (2°C) minimum*, 150°F (66°C) maximum* (surface)
At least 5°F (2.8°C) above dew point

Relative humidity: 85% maximum

Material should be at least 77-100°F (25-38°C) for hand application or 120-140°F (49-60°C) for plural spray application.

Refer to product Application Bulletin for detailed application information.

*PipeClad 5000 can be applied when ambient conditions are below 35°F/2°C, however the substrate must be preheated and maintained above 35°F/2°C until fully cured. Preheating may be accomplished with a propane torch or induction coil prior to abrasive blasting. If wanting to apply above 150°F (66°C), or for additional information, contact your Sherwin-Williams representative.

ORDERING INFORMATION

Packaging:

Part A & B: 20 Gallon (76L) & 200 Gallon (757L) Kits:
each component is filled 5 gallons (18.9L) in a 5 gallon (18.9L) container, and 50 gallons (189L) in a 55 gallon (208L) drums

1 Liter (0.26 Gallon) Tubs:
Part A is filled 750 mL (0.20 gallons) in a half gallon container, and Part B is filled 250 mL (0.07 gallons) in a pint container

Cartridge: 300 x 100 mL manual dispense
750 x 250 mL manual dispense

Weight: 11.3 ± 0.2 lb/gal ; 1.35 Kg/L, mixed may vary with color

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APPLICATION BULLETIN

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SURFACE PREPARATIONS

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

Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Blast clean all surfaces using a sharp, angular abrasive for optimum surface profile (2.5-4.5 mils / 64-114 microns).

COATING REPAIR AND GIRTH WELD:
Damage less than 0.023 m^2 (36 in^2) - all disbonded powder coating, rust, and scale should be removed from the patch area by media blasting, filling, power brushing, wire brushing or other suitable abrasive method prior to patch application. If pipe has been exposed to sunlight for more than three weeks, the surface should be roughened by sanding or wire brushing before coating. Other girth weld and repair options are possible with written consent of Sherwin-Williams.

Surface Preparation Standards

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White Metal		Sa 3	SP 5	1
Near White Metal		Sa 2.5	SP 10	2
Commercial Blast		Sa 2	SP 6	3
Brush-Off Blast		Sa 1	SP 7	4
Hand Tool Cleaning	Rusted	C St 2	SP 2	-
	Pitted & Rusted	D St 2	SP 2	-
Power Tool Cleaning	Rusted	C St 3	SP 3	-
	Pitted & Rusted	D St 3	SP 3	-

APPLICATION CONDITIONS

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APPLICATION EQUIPMENT

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

Clean Up .....MEK or similar

Spray

This material can only be sprayed with a plural component sprayer. See Performance Tips section for details. Consult your Sherwin-Williams representative for equipment recommendations.

Brush

Brush.....Natural Bristle
Reduction.....Not recommended

Roller

Cover .....3/8" woven with solvent resistant core
Reduction.....Not recommended

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

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APPLICATION PROCEDURES

Surface preparation must be completed as indicated.

See Performance Tips section for detailed application instructions.

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

Recommended Spreading Rate per coat:

	Minimum	Maximum
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Dry mils (microns)	**25** (625)	**60** (1500)
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NOTE: Brush or roll application may require multiple coats to achieve maximum film thickness and uniformity of appearance.

Drying Schedule @ 30.0 mils (750 microns) wet:

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maximum:	24 hours	8 hours	4 hours
Cure to service:	18 hours	6 hours	3 hours

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

Sweat-in Time None Required

Pot Life: 15 minutes

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

*If applying to the CSA Z245.30-14 specification, refer to Sherwin Williams manufacturer's qualified application procedure (MQAP.)

CLEAN UP INSTRUCTIONS

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

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PERFORMANCE TIPS

Requires Plural Component for Spray Application: Heat both components to 120-140°F (49-60°C). Limit mixed fluid hose length to 50 ft., 3/8" ID minimum with 3-6 ft, ¼" ID whip. Use two 6" static mix tubes - at mix manifold and one 6" at the mix fluid hose/whip hose connection. 4500-5000 psi material pressure needed at the spray tip. Use Heated hoses if using a remote mix manifold setup. Consult your Sherwin-Williams representative for more detailed information.

Can NOT be sprayed single leg. Viscosity too high at ambient temperatures to achieve a suitable spray pattern. Heating mixed material to lower viscosity will shorten pot life and lock up hose and pump.

Cartridges: for pneumatic dispense, brush, and spray application

Consult your Sherwin-Williams Representative regarding the Product Bulletin for Pipeclad 5000. This provides additional guidelines on performance characteristics and spray properties.

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

SAFETY PRECAUTIONS

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