

High Performance Polyurethane

SP- 1864® is a “coal tar free”, high performance two-component polyurethane coating engineered for applications in Marine, Industrial and Pipeline industries. This low friction, high abrasion and impact resistant coating is used on exterior hulls to reduce ad-freezing of ships provide abrasion and corrosion protection. Further, it is used to coat marine pilings and docks where impact and abrasion resistance is required and cathodic protection is utilized. SP-1864® is available in Spray Grade. For Brush Grade Application, use SP-1853®.



Applications: SP- 1864® is well suited for ship hulls, decks, use on girth welds, hot bends on pipelines operating at high temperatures, and cathodic disbonding resistance at temperatures up to 65°C (149°F).



Features & Benefits

- Excellent resistance to high temperature cathodic disbonding up to 65°C (149°F)
- Excellent adhesion to steel surfaces, Fusion Bond Epoxy (FBE), Fiber Reinforced Plastic (FRP) and concrete
- High build one-coat application
- 100% solids – No VOCs. Does not contain coal tar
- Excellent fresh and salt water, impact and abrasion resistance

Technical Data

Solid Content	100%		
Colour:	Base: Grey	Hardener: Amber	Mixed: Grey
Theoretical Coverage:	1.0 m ² /Litre/mm (1604 ft ² /US Gallon/mil)		
Recommended Thickness:	0.50 mm minimum to 2.5 mm maximum (20 mils to 100 mils) Depends upon application; consult with SPC Representative		
Specific Gravity:	Base: 1.29±0.03	Hardener: 1.24±0.03	Mixed Material: 1.28±0.03
Mixing Ratio by Volume:	3 parts Base to 1 part Activator		

Typical Performance Properties

Test Results for Panels with Dry Film Thickness of 1.75-2.00 mm (70-80 mils).

Service Temperature	Up to 65°C (149°F)
Adhesion to Steel	25°C (77°F): >27 MPa (>4000 psi) (ASTM D4541)
Wet adhesion to steel (Hot water soak resistance)	60 days @ 80°C (176°F): Rating #1(CSA-Z245.20)
Cathodic Disbondment resistance	28 days @ 25°C (77°F) @ - 1.5 Volts: 3.50 mmR (CSA-Z245.20) 28 days @ 65°C (149°F) @ - 1.5 Volts: <11.00 mmR (CSA-Z245.20)
Flexibility (*PPD)	@ 25°C (77°F) : 2.50°PPD (CSA-Z245.20) @ 0°C (32°F) : 1.50°PPD (CSA-Z245.20) @ -30°C (-22°F) : 0.50°PPD (CSA-Z245.20)
Impact Resistance	@ 25°C (77°F) : >8.1 Joules (>6.0 ft-lbf) (CSA-Z245.20) @ 0°C (32°F) : >6.8 Joules (>5.0 ft-lbf) (CSA-Z245.20) @ -30°C (-22°F) : >2.0 Joules (>1.4 ft-lbf) (CSA-Z245.20)
Volume Resistivity	1.0 x 10 ¹⁴ (ohm-cm) (ASTM D257)
Hardness	25°C (77°F): 78 Shore D (ASTM D2240)
Elongation %	25°C (77°F) >30 (ASTM D522)

Surface Preparation

Steel Substrate:	Primer: No primer required
	Cleanliness: Near-White
	Standards: NACE No. 2/SSPC SP-10, SA 2.5 (ISO 8501-1)
	Profile: 75 microns minimum to 125 microns maximum (3.0 mils to 5.0 mils).
Concrete Substrate:	Primer: SP-1264® Damp Concrete Primer Sealer required prior to application of SP-1864® to concrete.
	Cleanliness: Remove laitance and other surface contaminants by grit blasting or mechanical scarification. Seal using SP-1264® Damp Concrete Primer Sealer.

Coating Application

Application Equipment	Spray Grade: Graco Hydra-Cat or alternative: Tip Size: .019-.031
Mixing & Thinning:	Premixing not recommended for spray grade. Do not thin.
Application Conditions	Ambient Temperature: -10°C to 50°C (14°F to 122°F) maximum
	Substrate Temperature: The acceptable substrate (metal or concrete surface) temperature range for the application of SP-1864® is 1°C (33°F) to 100°C (212°F). Preheating of the substrate is required if the surface to be coated is below 1°C (33°F). Relative Humidity prior to and during the application of SP-1864® must be 80% or less. The substrate temperature must be a minimum of 3°C (5°F) above the dew point temperature before proceeding with the coating operation.
	Material Temperature: Base: 60°C (140°F). Activator: 25°C (77°F).

SP-1864®

High Performance Polyurethane

Pot Life and Cure Times

Brush Grade Pot Life: 200 gms mass @ 25°C (77°F)	8 – 10 minutes
Spray Grade Gel Time: 200 gm mass @ Base @ 60°C (140°F) Activator @ 25°C (77°F)	4 minutes 30 seconds

Recoat Interval: 25°C (77°F) @ 50% RH	Maximum 48 hours
---	------------------

SP-1864® is a one-coat application system. However, if there are areas below the specified thickness and the coating has cured beyond the specified re-coat window, roughening of the surface is necessary to ensure inter-coat adhesion. Small areas ≤ 316 sq. cm. (≤ 49 sq. in.) may be sanded using a medium grit (80-100) carborundum cloth. All dust from the sanding or blast roughening must be removed from the surface prior to the application of the coating.

Dry Time: (ASTM D 1640):	@25°C (77°F)
Touch Dry:	2 hours
Dry Hard:	4.5 hours
Full Cure:	4 days

Storage and Shelf Life

Store in a cool, dry, well-ventilated area at temperatures between 15°C (59°F) and 35°C (95°F). Keep the lids sealed. The Shelf Life is a maximum of 24 months for the Base and 12 months for the Activator in unopened containers. DO NOT FREEZE.

SP-1864® Spray Grade Curing Table

SUBSTRATE TEMPERATURE	TOUCH DRY CURING TIME 1.75 – 2 mm (70 mils – 80 mils) DFT as per ASTM D1640	DRY HARD CURING TIME 1.75 – 2 mm (70 mils – 80 mils) DFT as per ASTM D1640
90°C (194°F)	15 minutes	35 minutes
80°C (176°F)	18 minutes	40 minutes
60°C (140°F)	22 minutes	1 hours
50°C (122°F)	35 minutes	1.5 hours
40°C (104°F)	1 hour	2.25 hour
20°C (68°F)	2.5 hours	5.0 hours

Substrate: 12 mm (0.50 inch) Thick Steel Panels
Base Material Temperature: 60-65°C (140-149°F)
Activator Material Temperature: 25°C (77°F)

Note: The information above is to serve as a guide only. The test results were compiled under laboratory-controlled conditions. Field results may vary due to variable conditions such as radiant heat loss and the cooling effects of wind.

Safety: Refer to SPC's Safety Data Sheet prior to use. Carefully read and follow all safety instructions on labels and packaging. Handle and store material with care in accordance to the Safety Data Sheet. Follow and observe any applicable local or national laws and regulations.

Effective Date: March 13, 2017.

All information, recommendations, and test performance results herein were obtained in a controlled environment and SPC makes no claim that the data and tests accurately represent all environments and specific project specification requirements. As application, environmental and design factors can vary significantly, due care should be exercised in the selection and use of the coating. SPC products are sold with the understanding that the purchaser or user is solely responsible for determining their suitability for any purpose, and that the purchaser or user assumes all risks and liability associated with the use of the product. No guarantee, either expressed or implied, is made with respect thereto or with respect to the infringement of any patent. The information herein is not to be copied, used in evidence, released for publication, or public distribution without written permission from Specialty Polymer Coatings.