

*The World Leader in Specialty Coatings*

## Epoxy/Polyurethane Hybrid Coating

SP-2888<sup>®</sup> R.G. is an epoxy/polyurethane Hybrid coating based on “State of the Art” epoxy/urethane chemistry. The synergistic effect of co-polymerizing epoxy and polyurethane produces a coating with the superior adhesion and corrosion resistance of an epoxy along with the added toughness of a polyurethane.

This environmentally friendly, 100% solids, no VOCs & isocyanate free, two component coating system is available in Brush Grade, Spray Grade, Repair Cartridges and Spray Cartridges. SP-2888<sup>®</sup> R.G. is the coating most preferred for protection of steel and other metal surfaces from severe corrosion and abrasion.



**Applications:** SP-2888<sup>®</sup> R.G. can be used as an external and/or internal lining for pipes, valves and fittings, girth welds for buried or immersed services, rehabilitation on existing pipelines, slip bore and directional drilling applications.



### Features & Benefits

- Excellent resistance to cathodic disbonding up to 85°C (185°F)
- Excellent adhesion to grit blasted steel surfaces, Fusion Bond Epoxy (FBE), Fiber Reinforced Plastic (FRP) and Polyolefin (PP/PE)
- Excellent abrasion, chemical, water absorption and impact resistance
- Good flexibility
- High build single coat application >50 mils
- 100% solids, zero VOCs, Isocyanate free, environmentally friendly & safe
- Easily applied by spray, brush, roller or cartridge

SP-2888<sup>®</sup> R.G. meets or exceeds FBE coating performance requirements, as specified in Canadian (CSA Z245.20, CSA Z245.30), USA (NACE RP0394), and British (CW6) Standards.

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# SP-2888® R.G.

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### Technical Data

<b>Solid Content:</b>	100%		
<b>Colour:</b>	Base: White	Hardener: Blue	Mixed: Blue
<b>Theoretical Coverage:</b>	1.0 m <sup>2</sup> /Litre/mm (1604 ft <sup>2</sup> /US Gallon/mil)		
<b>Recommended Thickness:</b>	0.50 mm to 1.25 mm (20 mils to 50 mils)		
<b>Standard Corrosion Protection:</b>	1.0 mm to 1.78 mm (40 mils to 70 mils)		
<b>Directional Drill &amp; Mechanical Protection:</b>	1.0 mm to 1.78 mm (40 mils to 70 mils)		
<b>Specific Gravity:</b>	Base: 1.55 ± 0.03	Hardener: 1.05 ± 0.03	Mixed Material: 1.42 ± 0.03
<b>Mixing Ratio by Volume:</b>	3 parts Base to 1 part Hardener		
<b>Spray &amp; Brush Grade:</b>	2 parts Base to 1 part Hardener		
<b>Repair Cartridge:</b>	2 parts Base to 1 part Hardener		

### Typical Performance Properties

<b>Service Temperature:</b>	Up to 85°C (185°F)
<b>Adhesion to Steel:</b> (Pull Off Strength)	>20 MPa (>3000 psi) (ASTM D4541 Type IV)
<b>Adhesion to FBE:</b> (Pull Off Strength)	>20 MPa (>3000 psi) (ASTM D4541) on FBE
<b>Adhesion to Steel:</b> (Hot Water Soak)	120 days @ 75°C (167°F): Rating #1 (CSA Z245.20, Clause 12.14) 28 days @ 75°C (167°F): Rating #1 (CSA Z245.20, Clause 12.14)
<b>Adhesion to Fusion Bond Epoxy:</b>	28 days @ 80°C (176°F): Rating #1 (CSA Z245.20, Clause 12.14) 28 days @ 85°C (185°F): Rating #1 (CSA Z245.20, Clause 12.14)
<b>Cathodic Disbondment Resistance:</b>	28 days @ 20°C (68°F): 1.57 mmR (CSA Z245.20, Clause 12.8) 28 days @ 80°C (176°F): 7.94 mmR (CSA Z245.20, Clause 12.8) 28 days @ 85°C (185°F): 8.58 mmR (CSA Z245.20, Clause 12.8)
<b>Impact Resistance:</b>	@ -30°C (-22°F): 1.5 J (1.11 ft-lbf) (CSA-Z245.20, Clause 12.12) @ -30°C (-22°F): DFT > 60 mils for HDD Application (1.80mm) 3.0 J (2.21 ft-lbf) (CSA-Z245.20, Clause 12.12) @ 25°C (77°F): 5.0 J (3.69 ft-lbf) (CSA-Z245.20, Clause 12.12)
<b>Flexibility:</b>	@ -30°C (-22°F): 0.75°PPD (CSA Z245.20, Clause 12.11)
<b>Dielectric Strength:</b>	400 (Volt/mil) (ASTM D149)
<b>Dielectric Constant:</b>	(60 cycles) : 4.2 (ASTM D150)
<b>Elongation at Break:</b>	@ 25°C (77°F) DFT 0.50-0.75 mm (20-30 mils): 4.2% (ASTM D882 Method A)
<b>Compressive Strength:</b>	@ 25°C (77°F): 1.56x10 <sup>4</sup> psi (ASTM D695)
<b>Tensile Break Strength:</b>	@ 25°C (77°F) (DFT 0.50-0.75 mm (20-30 mils): 44.86 (MPa (6560 psi)) (ASTM D882 Method A)
<b>Taber Abrasion Resistance:</b>	0.3562 gram weight loss (ASTM D4060-10) (CS-17 Wheel, 1000 gram load with 5000 cycles)
<b>Chemical Resistance:</b>	No change in various chemical solutions (ASTM G20, 90 day immersion, R.T.)
<b>Water Absorption:</b>	<0.1% (ASTM D570, (%), 24h, R.T.)
<b>Water Vapour Permeance</b>	<0.74 gm / m <sup>2</sup> / 24 hrs (ASTMD1653)
<b>Resistivity:</b>	1.0x10 <sup>14</sup> (ohm-cm) (ASTM D257)
<b>Hardness:</b>	25°C (77°F): 85 ± 3 Shore D (ASTM D2240)

### Surface Preparation

<b>Steel Substrate:</b>	Cleanliness:	Near White
	Standards:	NACE No.2/SSPC SP-10, SA 2.5 (ISO 8501-1)
	Profile:	62.5 microns (2.5 mils) – 125 microns (5.0 mils)
The surface temperature shall be at least 3°C (5°F) above the dew point temperature from the time of blast cleaning until completion of the coating application.		
<b>PE/PP/HPCC:</b>	Preparation & Treatment:	Consult SPC for instructions.
<b>FBE:</b>	Profile:	62.5 microns (2.5 mils) minimum

### Storage and Shelf Life

Store in a cool, dry, well-ventilated area at temperatures between 5°C (41°F) and 40°C (104°F). Keep in a tightly sealed container when not in use. The shelf life of SP-2888® R.G. is a maximum of 24 months from the date of manufacture if the materials are in unopened containers. DO NOT FREEZE.

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.

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## Coating Application

<b>Application Equipment:</b>	Spray Grade:	Graco XP-70 Hydra-Cat or alternative: Tip Size: .019-.031; Heated hose bundle consisting of 3/8" ID base and 1/4" ID hardener line with 1/4" solvent flush line outside of the bundle. Glycol heat trace (Insulated whip hoses not recommended) or equivalent capable of 80°C (176°F).
	Brush Grade:	Brush or Roller
	Cartridge:	Manual Dispenser
<b>Mixing &amp; Thinning:</b>	Brush Grade/Spray Grade by Volume: 3 Parts Base to 1 Part Hardener. Cartridge Volume: 2 Parts Base to 1 Part Hardener. Do not thin.	
<b>Application Conditions:</b>	Ambient Temperature:	Brush Grade, Spray Grade or Cartridge: -40°C (-40°F) to 50°C (122°F)
	Substrate Temperature:	10°C (50°F) to 100°C (212°F). Preheating of the substrate is required if the surface to be coated is below 10°C (50°F). 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:	Recommended Spray Preheat Temperature in Drum/Pail: Base: 70°C (158°F) to 80°C (176°F) Hardener: 20°C (68°F) to 30°C (86°F) (Ambient-typically not heated) Preheating of the base material is required to balance the viscosity of base and hardener. In cases of extreme weather conditions the recommended temperatures may change, please consult your SPC representative for more information.

## Pot Life and Cure Times

<b>Brush Grade Pot Life:</b> 200 gms mass @ 25°C (77°F)	15 minutes	
<b>Spray Grade Gel Time:</b> 200 gms mass @ Base: 70°C (158°F), Hardener: 25°C (77°F)	1.5 minutes	
<b>Recoat Interval:</b> 25°C (77°F) 80°C (176°F)	Brush Grade:	Spray Grade:
	60 minutes	60 minutes
	3 Minutes	2 minutes
The recommended recoat intervals are general guidelines only. The recoat intervals may vary significantly due to variable conditions including but not limited to, humidity, surface temperature, and the product application temperature. Contact your SPC representative for assistance in determining minimum and maximum recoat intervals specific to your application.		
<b>Backfilling Time:</b> Shore D Hardness ≥80		
<b>Dry Time:</b> (ASTM D 1640): 0.60 mm (25ml) Coating Thickness @ 25°C (77°F)		
Touch Dry:	Brush Grade:	Spray Grade:
Hard Dry:	55 minutes	40 minutes
	3.5 hours	2.5 hours

## SP-2888® R.G. Curing Table

SUBSTRATE TEMPERATURE	DRY HARD CURING TIME 0.50 mm (20 mils) DFT as per ASTM D-1640	
	Brush Grade	Spray Grade
90°C (194°F)	2.5 minutes	1.6 minutes
80°C (176°F)	3 minutes	2 minutes
70°C (158°F)	5 minutes	3 minutes
60°C (140°F)	14 minutes	9 minutes
50°C (122°F)	37 minutes	16 minutes
40°C (104°F)	1 hour 20 minutes	38 minutes
30°C (86°F)	1 hour 45 minutes	1 hour 40 minutes
25°C (77°F)	3 hours 30 minutes	2 hours 30 minutes
20°C (68°F)	5 hours 40 minutes	4 hours 50 minutes
10°C (50°F)	16 hours	14 hours

Material Temperature SP-2888® R.G. Spray Grade - Base: 70°C (158°F), Hardener: 25°C (77°F), SP-2888® R.G. Brush Grade – Base & Hardener: 25°C (77°F)  
Note: This information 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.

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