SP-2888® RG

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Epoxy/Polyurethane Hybrid Coating
Description	SP-2888® RG 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® RG is the coating most preferred for protection of steel and other metal surfaces from severe corrosion and abrasion.
Typical Uses	SP-2888® RG 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	• 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® RG meets or exceeds FBE coating performance requirements, as specified in Canadian (CSA Z245.20, CSA Z245.30), USA (NACE RP0394), and British (CW6) Standards.
Color	Blue (0100)
Dry Film Thickness	508 - 1270 microns (20 - 50 mils) DFT 1016 - 1778 microns (40 - 70 mils) DFT - Directional Drill & Mechanical Protection
Solids Content	By Volume 100%
Theoretical Coverage Rate	39.4 m²/l at 25 microns (1604 ft²/gal at 1.0 mils) 2.0 m²/l at 500 microns (80 ft²/gal at 20.0 mils) 0.6 m²/l at 1750 microns (23 ft²/gal at 70.0 mils) Allow for loss in mixing and application.
Specific Gravity	Base: 1.55 ± 0.03 g/ml Hardener: 1.05 ± 0.03 g/ml Mixed Material: 1.42 ± 0.03 g/ml

SUBSTRATES & SURFACE PREPARATION

Steel	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.
PE/PP/HPCC	Preparation & Treatment: Consult SPC for instructions.

SUBSTRATES & SURFACE PREPARATION

FBE	Profile: 62.5 microns (2.5 mils) minimum

PERFORMANCE DATA (TYPICAL VALUES)

Service Temperature	Up to 85˚C (185˚F)
Adhesion to Steel (Pull Off Strength)	>20 MPa (>3000 psi) (ASTM D4541 Type IV)
Adhesion to FBE (Pull Off Strength)	>2000 MPa (>3000 psi) (ASTM D 4541 Type IV)
Adhesion to Steel (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)
Adhesion to Fusion Bond Epoxy	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)
Cathodic Disbondment Resistance	28 days @ 20˚C (68˚F): 1.57 mmR (CSA ZZ245.20, Clause 12.8) 28 days @ 80˚C (176˚F): 7.94 mmR (CSA ZZ245.20, Clause 12.8) 28 days @ 85˚C (185˚F): 8.58 mmR (CSA ZZ245.20, Clause 12.8)
Impact Resistance	@ -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)
Flexibility	@ -30˚C (-22˚F): 0.75˚PPD (CSA Z245.20, Clause 12.11)
Dielectric Strength	400 (Volt/mil) (ASTM D149)
Dielectric Constant	(60 cycles) : 4.2 (ASTM D150)
Elongation at Break	@ 25°C (77°F) DFT 0.50-0.75 mm (20-30 mils): 4.2% (ASTM D882 Method A)
Compressive Strength	@25°C (77°F): 1.56x104 psc(ASTM D695)
Tensile Break Strength	@ 25˚C (77˚F) (DFT 0.50-0.75 mm (20-30 mils): 44.86 (MPa (6560 psi)) (ASTM D882 Method A)
Taber Abrasion Resistance	0.3562 gram weight loss (ASTM D4060-10) (CS-17 Wheel, 1000 gram load with 5000 cycles)
Chemical Resistance	No change in various chemical solutions (ASTM G20, 90 day immersion, R.T.)
Water Absorption	<0.1% (ASTM D570, (%, 24h, R.T.)
Water Vapour Permeability	<0.003 (perm-in) (ASTM D1653)
Volume Resistivity	$1.0x10^{14}$ (ohm-cm) (ASTM D257)
Hardness	25˚C (77˚F): 85 ± 3 Shore D (ASTM D2240)

MIXING & THINNING

Brush Grade Pot Life	15 minutes 200 gms mass @ 25˚C (77˚F)
Spray Grade Gel Time	1.5 minutes 200 gms mass @ Base: 70˚C (158˚F), Hardener: 25˚C (77˚F)
Mixing	**Spray Grade**: Agitation of the Part A component is recommended during the preheating process and during application to ensure a uniform heat throughout the base portion when applying material out of drums. Component Details for Color: Blue (0100): The Base is White (0800) and the Hardener is Blue (0100)
Thinning	Do not thin.
Ratio	Spray & Brush Grade: 3:1, Base to Hardener Repair Cartridge: 2 parts Base to 1 part Hardener

APPLICATION EQUIPMENT GUIDELINES

Listed below are general equipment guidelines for the application of this product. Job site conditions may require modifications to these guidelines to achieve the desired results.

Spray Grade	Graco XP-70 Hydra-Cat or alternative: Tip Size: .019-.031; Heated hose bundle consisting of 3/8" ID base and ¼" ID hardener line with ¼" 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

APPLICATION CONDITIONS

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	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.

CURING SCHEDULE

Touch Dry

Brush Grade
25˚C (77˚F): 55 minutes
Spray Grade:
25˚C (77˚F): 40 minutes

Recoat Interval

Brush Grade
25˚C (77˚F): 60 minutes
80˚C (176˚F): 3 minutes
Spray Grade:
25˚C (77˚F): 60 minutes
80˚C (176˚F): 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.

Dry Hard Time | See table below for the time required to reach Dry Hard stage.

Surface Temp.	Dry Hard (Brush Grade)	Dry Hard (Spray Grade)
10°C (50°F)	16 Hours	14 Hours
20°C (68°F)	5.66 Hours	4.8 Hours
25°C (77°F)	3.5 Hours	2.5 Hours
30°C (86°F)	1.75 Hours	1.66 Hours
40°C (104°F)	1.33 Hours	38 Minutes
50°C (122°F)	37 Minutes	16 Minutes
60°C (140°F)	14 Minutes	9 Minutes
70°C (158°F)	5 Minutes	3 Minutes
80°C (176°F)	3 Minutes	2 Minutes
90°C (194°F)	2.5 Minutes	1.6 Minutes

The above curing times are based on a thinkness 0.50 mm (20 mils) DFT as per ASTM D-1640. Material Temperature of Spray Grade - Base: 70˚C (158˚F), Hardener: 25˚C (77˚F). Material Temperature of 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.

Backfilling Time | Shore D Hardness ≥80

CLEANUP & SAFETY

Cleanup | Carboline Thinner 2 or SP-100 Equipment Wash

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: October 23, 2018.

PACKAGING, HANDLING & STORAGE

Shelf Life | A maximum of 24 months from the date of manufacture if the materials are in unopened containers.

Storage | Store in a cool, dry, well-ventilated area at temperatures between 5°C (41°F) and 50°C (122°F). Keep in a tightly sealed container when not in use. DO NOT FREEZE.

PACKAGING, HANDLING & STORAGE

Packaging - Spray Grade	**80 Liter (21.1 Gallon) Kit** Part A: 60 liters (15.9 gallons) Part B: 20 liters (5.3 gallons) **800 Liter (211.3 Gallon) Kit** Part A: 600 liters (158.5 gallons) Part B: 200 liters (52.8 gallons) **1000 mL (0.26 Gallon) Cartridge** Part A: 750 mL (0.20 gallons) Part B: 250 mL (0.06 gallons)
Packaging - Brush Grade	**0.5 Liter (0.13 gallons) Kit** Part A: 0.38 liters (0.10 gallons) Part B: 0.12 liters (0.03 gallons) **1 Liter (0.26 Gallon) Kit** Part A: 0.75 liters (0.20 gallons) Part B: 0.25 liters (0.06 gallons) **1.5 Liter (0.40 Gallon) Kit** Part A: 1.13 liters (0.30 gallons) Part B: 0.37 liters (0.10 gallons) **2 Liter (0.53 gallons) Kit** Part A: 1.5 liters (0.40 gallons) Part B: 0.5 liters (0.13 gallons)
Packaging - Cartridges	**50 mL (0.013 Gallon) (Cartridge Grade)** Part A: 33.3 mL (0.009 gallons) Part B: 16.7 mL (0.004 gallons) **450 mL (0.12 Gallon) (Cartridge Grade)** Part A: 300 mL (0.08 gallons) Part B: 150 mL (0.04 gallons) **900 mL (0.24 Gallon) (Cartridge Grade)** Part A: 600 mL (0.16 gallons) Part B: 300 mL (0.08 gallons)

WARRANTY

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