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PRODUCT DATA SHEET

SP-3888[®]

DESCRIPTION: **SP-3888[®]** is a range of surface coatings based on “State of the Art” epoxy chemistry. **SP-3888[®]** is similar to SP-2888[®] R.G. but has high temperature operating capability. The cathodic disbonding resistance of **SP-3888[®]** is excellent at temperatures up to 95°C (203°F). **SP-3888[®]** is available in Brush Grade and Spray Grade. **SP-3888[®]** is also available in Cartridges for coating repairs.

ADVANTAGES:

- 100% Solids - No VOCs.
- High build single coat application.
- Isocyanate free.
- Excellent resistance to high temperature cathodic disbonding at temperatures up to 95°C (203°F)
- Excellent adhesion to grit blasted steel surfaces, Fusion Bond Epoxy (FBE), liquid epoxy, and urethane coatings.

USES:

- Internal lining for pipelines.
- Exterior coating for pipelines in buried or immersed service.
- Coating of pipe, valves and fittings.
- Rehabilitation of existing pipelines.
- Slip bore and directional drilling applications.
- Girth weld coatings.
- Tank linings.

APPLICATION:

- Spray Grade: Graco Hydra-Cat (Tip Size: .019 - .031)
- Brush Grade: Brush or Roller
- Cartridge: Manual Dispenser

CLEANING MATERIALS:

- SP-100 Equipment Wash
- SP-110 Tool Cleaner
- SP-120 Internal Storage Lubricant

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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SURFACE PREPARATION:

- Steel Substrate:**
- **Cleanliness** : Near White
 - **Standards** : NACE 2, Sa 2½ (Swedish Scale, ISO 8501-1)
: SSPC SP-10 (The Society for Protective Coatings)
 - **Profile** : 62.5 microns minimum to 125 microns maximum
(2.5 mils to 5.0 mils)
- FBE:**
- **Profile** : 6.25 microns (2.5 mils) minimum

- MIXING RATIO:**
- Brush Grade or Spray Grade; By Volume: 3 Parts Base to 1 Part Hardener.
 - Cartridge; By Volume: 2 Parts Base to 1 Part Hardener.

HOSE BUNDLE: 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 or equivalent capable of 80°C (176°F)
* Insulated whip hoses not recommended for glycol heat trace*

TIP SIZE: .019 – .033

RECOMMENDED SPRAY PREHEAT TEMPERATURES 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)

Pre-heating 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.



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RECOMMENDED FILM THICKNESS:

- **Pipelines:** 0.50 mm minimum to 1.25 mm (20 mils to 50 mils)
- **Directional & Mechanical Protection:** 1.00 mm minimum to 1.78 mm (40 mils to 70 mils).
- **Tank Lining:** 0.75 to 1.50 mm (30 to 60 mils).
1.25 to 1.75 mm (50 to 70 mils) Tank bottom.
1.8 to 2.4 m (6 to 8 ft.) Up tank wall.
- Depends upon application; consult with SPC Representative.

RE-COAT INTERVAL:

Brush Grade:

@ 25°C (77°F) Maximum: 120 Minutes

@ 80°C (176°F) Maximum: 3 Minutes

Spray Grade:

@ 25°C (77°F) Maximum: 120 Minutes

@ 80°C (176°F) Maximum: 2 Minutes

BACKFILLING:

Mechanical stress including backfilling or lowering in, shall not be applied to the coating until it has reached a Shore D Hardness ≥ 80 .

COMPATIBILITY WITH OTHER ANTI CORROSION COATINGS:

SP-3888® is compatible with all SPC and fusion bonded epoxy (FBE) anti-corrosion coatings. For compatibility with other anti-corrosion coatings, please consult with SPC.



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HANDLING PROPERTIES:

	<u>Brush Grade</u>	<u>Spray Grade</u>
Pot Life [100 gm (3.5 oz) mass @ 25°C (77°F)].....	15 Minutes	
Gel time [200 gm (7.0 oz) mass, Base 70°C (158°F), Hardener 25°C (77°F)].....		2.25 Minutes
Dry Time (ASTM D1640 [0.60 mm (25 mils) coating thickness @ 25°C (77°F)])		
Touch Dry Time.....		
Dry Hard Time.....	50 Minutes 4.0 Hours	45 Minutes 3.5 Hours
Ambient Temperature	-25°C to 100°C (-13°F to 212°F)	
Substrate Temperature.....	The acceptable substrate (metal surface) temperature range for the application of SP-3888 [®] is 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.	
Storage / 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-3888 [®] is a maximum of 24 months from the date of manufacture if the materials are in unopened containers.	

LIQUID PROPERTIES:

BASE

HARDENER

Appearance.....	Grey Viscous Liquid.	Light Amber Liquid.
Solids Content (%)	100	100
Specific Gravity (ASTM D1475)....	1.60 ± 0.03	1.03 ± 0.03
Specific Gravity (ASTM D1475)....	Base & Hardener Mixed:	1.46 ± 0.03
Coverage (Theoretical).....	Base & Hardener Mixed:	39.0 m ² /Litre/25 microns [1604 ft ² /U.S. Gallon/mil]

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PHYSICAL / MECHANICAL / ELECTRICAL PROPERTIES:

Adhesion to Steel:

Dry Adhesion (Pull-off Strength) [MPa (psi)] (ASTM D4541-95-A4) (Self-Alignment Adhesion Tester, Type IV) [25°C (77°F)].....	> 20 (> 3000)
Wet Adhesion (Hot Water Soak) (CSA-Z245.20-10, Clause 12.14, 120 Days) [75°C ± 3°C (167°F ± 5°F)]	Rating #1
Cathodic Disbonding Test [Average Radius (mm)] [CSA-Z245.20-10, Clause 12.8, System 1A, 28 Days @ 65°C (149°F)]	9-10
Cathodic Disbonding Test [Average Radius (mm)] [CSA-Z245.20-10, Clause 12.8, System 1A, 28 Days @ 95°C (203°F)]	10-11
Dielectric Strength (volt/10 ⁻³ in) (ASTM D149).....	400
Dielectric Constant (60 cycles) (ASTM D150).....	4.2
Hardness (Shore D) (ASTM D2240-91) [25°C (77°F)].....	85
Heat Resistance [°C (°F)].....	> 150 (> 302)
Impact Strength [Joules (ft-lbf)] (CSA-Z245.20-10, Clause 12.12) [-30°C (-22°F)]	1.5 (1.11)
Salt Spray Resistance (h) (ASTM B117)	> 1000
Volume Resistivity (ohm-cm) (ASTM D257)	1.0 x 10 ¹⁴
Water Vapour Permeability (perm-in) (ASTM D1434).....	< 0.003
Water Absorption (% , 24 ^h , r.t.) (ASTM D570).....	0.1

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CHEMICAL RESISTANCE (ASTM G20) (90 Days immersion @ ambient temperatures):

Ammonium Chloride, 10% solution.....	No change observed.
Bio Diesel	No change observed.
Calcium Chloride, 10% solution.....	No change observed.
Chromic Acid 5% solution.....	No change observed.
Diesel.....	No change observed.
Ethanol.....	No change observed.
Hydrochloric Acid, 5% solution.....	No change observed.
Mineral Oil	No change observed.
Monoethylene Glycol.....	No change observed.
Naphtha	No change observed.
Nitric Acid, 5% solution.....	No change observed.
Potassium Chloride, 10% solution.....	No change observed.
Sodium Carbonate, 10% solution.....	No change observed.
Sodium Chloride, 10% solution	No change observed.
Sodium Silicate solution.....	No change observed.
Sodium Hydroxide, 10% solution	No change observed.
Sulphuric Acid, 5% solution	No change observed.
Zinc Sulphate, 10% solution.....	No change observed.

SAFETY: Read the Material Safety Data Sheets before use.

NOTE: All epoxy coatings will change colour, lose gloss and chalk on exterior exposure.
However, the protective properties of the material will not be affected.

REFER TO THE SP-3888[®] CURING TABLE (APPENDIX “A”).

EFFECTIVE DATE: October 24, 2016 Rev. 2

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APPENDIX “A”



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SUBSTRATE TEMPERATURE		DRY HARD CURING TIME	
°C	°F	Brush Grade	Spray Grade
90	194	2 Minutes	1.5 Minutes
80	176	3 Minutes	2 Minutes
70	158	5 Minutes	3 Minutes
60	140	15 Minutes	9 Minutes
50	122	37 Minutes	16 Minutes
40	104	1 Hour 20 Minutes	38 Minutes
30	86	1 Hour 45 Minutes	1 Hour 40 Minutes
25	77	4 Hours	3 Hour 30 Minutes
20	68	5 Hours 40 Minutes	4 Hours 50 Minutes
10	50	16 Hours	14 Hours

Substrate: 12 mm (0.5 inch) Thick Steel Panels

Brush Grade Material Temperature: Base and Hardener: 25°C (77°F)

Spray Grade Material Temperature: Base: 70°C (158°F)
Hardener: 25°C (77°F)

Dry Film Thickness: 0.50 mm (20 mils) DFT as per ASTM D1640.

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.

Effective Date: August 31, 2015

Rev. 2