SP-8988

Product Data Sheet

The World Leader in Specialty Coatings

High Temperature Ceramic Phenolic Epoxy

SP- 8988 is a unique "Ceramic-Phenolic-Novalac-Epoxy" single coat application pipe coating/lining. The highly cross-linked matrix makes SP-8988 ideal for high temperature pipeline coating service. The product has an excellent resistance to high temperature cathodic disbonding up to 180˚C (356˚F) with superior hot pull-off adhesion. The ceramic component provides excellent abrasion resistance. The environmentally friendly, 100% solids, two component coating system is available in Brush Grade and Spray Grade.

Applications: SP- 8988 can be used as an exterior coating or a lining for pipe, valves and fittings used in buried or immersed services, offering excellent barrier protection at high temperatures.

Features & Benefits

- Excellent resistance to high temperature cathodic disbonding up to 180˚C (356˚F)
- Excellent adhesion to grit blasted steel surfaces, Fusion Bond Epoxy (FBE), and Fiber Reinforced Plastics (FRP)
- Service Temperature up to 180˚C (356˚F)
- Excellent impact resistance
- High build in a single coat
- Good flexibility
- Excellent chemical resistance

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Technical Data

Solid Content	100%		
Colour:	Base: Light Grey	Hardener: Amber	Mixed: Grey
Theoretical Coverage:	1.0 m^2/Litre/mm (1604 ft^2/US Gallon/mil)		
Recommended Thickness:	1.0 mm minimum to 2.0 mm maximum (40 mils to 80 mils) Depends upon application; consult with SPC Representative		
Specific Gravity:	Base: 1.51±0.03	Hardener: 1.00±0.03	Mixed Material: 1.41±0.03
Mixing Ratio by Volume: Spray & Brush Grade:	4 parts Base to 1 part Hardener		

Typical Performance Properties

Service Temperature	Up to 180˚C (356˚F)
Adhesion to Steel	25˚C (77˚F): >38 MPa (>5500 psi) (ASTM D4541) 150˚C (302˚F): >8.3 MPa (>1200 psi) (ASTM D4541)
Wet adhesion to steel (Hot water soak resistance)	28 days @ 95˚C (203˚F): Rating #1(CSA-Z245.20)
Cathodic Disbondment resistance	28 days @ 150˚C (302˚F) : 2.33 mmR 28 days @ 180˚C (356˚F) : 2.56 mmR 60 days @ 180˚C (356˚F) : 6.36 mmR (CSA-Z245.20-10, Clause 12.8, System 1A)
Flexibility	@ 25˚C (77˚F) : 1.02˚PPD (CSA-Z245.20) @ 0˚C (32˚F) : 1.01˚PPD (CSA-Z245.20) @ -30˚C (-22˚F) : 0.55˚PPD (CSA-Z245.20)
Chemical Resistance	No change in various chemical solutions (ASTM G20, 90 day immersion, R.T.)
Hardness	25˚C (77˚F): 90 Shore D (ASTM D2240)

Surface Preparation

Steel Substrate:	Cleanliness:	Near-White
	Standards:	NACE No.2/ SSPC SP-10, SA 2.5 (ISO 8501-1)
	Profile:	62.5 microns minimum to 125 microns maximum (2.5 mils to 5.0 mils)

Coating Application

Application Equipment	Spray Grade: Brush Grade	Graco Hydra-Cat: Tip Size: .019-.031 Brush or Roller
Mixing & Thinning:	Brush Grade or Spray Grade: By Volume: 4 Parts Base to 1 Part Hardener. Do not thin.	
Application Conditions	Ambient Temperature:	Minimum 10˚C (50˚F)
	Substrate Temperature:	-40˚C (-40˚F) to 50˚C (122˚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:	Store in a cool, dry, well-ventilated area at temperatures between 5˚C (41˚F) and 40˚C (104˚F). Keep the lids sealed.

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-8988 is a maximum of 24 months from the date of manufacture if the materials are in unopened containers. DO NOT FREEZE.

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Pot Life and Cure Times

Pot Life: @ 50% RH	60 minutes
200 gms mass @ 25˚C (77˚F)	
Dry Time: (ASTM D 1640):	1.0 mm (40 mils) Coating Thickness @25˚C (77˚F)
Touch Dry:	2.5 hours
Dry Hard:	6.5 hours

SP-8988 is designed as a single-coat application coating; however, to correct anomalies or make repairs, an additional coat may be necessary. Sweep blasting of the surface is necessary to obtain inter-coat adhesion, ensuring to remove all gloss from the area being top coated. Blast roughening shall not be attempted until the coating has dried to a dry hard condition in accordance with the SP-8988 Curing Table. All dust from the sanding or blast roughening must be removed from the surface prior to the application of the coating.

SP-8988 Spray Grade Curing Table

SUBSTRATE TEMPERATURE	DRY HARD CURING TIME 1.0 mm (40 mils) DFT as per ASTM D1640	
	Brush Grade	Spray Grade
90˚C (194˚F)	7 minutes	5 minutes
80˚C (176˚F)	11 minutes	9 minutes
70˚C (158˚F)	16 minutes	13 minutes
60˚C (140˚F)	35 minutes	28 minutes
50˚C (122˚F)	1.25 hours	1 hour
40˚C (104˚F)	3 hours	2.50 hours
30˚C (86˚F)	5 hours	4 hours
20˚C (68˚F)	11 hours	10 hours

Substrate: 12 mm (0.50 inch) Thick Steel Panels
Material Temperature:
Brush Base & Hardener: 25˚C (77˚F)
Spray Base: 80˚C (176˚F) Hardener : 30˚C (86˚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.