SP-3888® Spray

PRODUCT DATA SHEET

SELECTION & SPECIFICATION DATA

Generic Type	Modified Novolac Epoxy Coating
Designation	**This is a Carboline Specialty Product** Minimum order quantities and special pricing will apply in North America. Contact your Carboline Sales Representative for more details.
Description	A range of surface coatings based on “State of the Art” epoxy chemistry. It has excellent high temperature operating capability up to 95˚C (203˚F). Available in Brush Grade, Spray Grade and Repair Cartridges.
Features	• Excellent resistance to cathodic disbonding up to 95˚C (203˚F) • Excellent adhesion to grit blasted steel surfaces, Fusion Bond Epoxy (FBE), Fiber Reinforced Pastic (FRP), Polyolefin (PP/PE) • Excellent abrasion, chemical, water absorption and impact resistance • Good flexibility • High build single coat appliction > 50 mils • 100% solids, Isocyanate free, environmentally friendly & safe Meets or exceeds FBE coating performance requirements, as specified in and Canadian (CSA Z245.20, CSA Z245.30), USA (NACE RP0394), and British (CW6) Standards.
Typical Uses	• Compressor / pump station discharge piping • Recycle lines • Valves • Fittings • Girth weld coatings • Slip bore and directional drilling • Rehabilitation of existing pipelines • Suitable for certain tank lining applications
Color	Grey (0700)
Dry Film Thickness	20 - 50 mils (508 - 1270 microns) DFT 40 - 70 mils (1016 - 1778 microns) DFT - Directional Drill & Mechanical Protection Depends upon application. Consult with your SPC Representative
Solids Content	By Volume 100%
Theoretical Coverage Rate	1604 ft²/gal at 1.0 mils (39.4 m²/l at 25 microns) 80 ft²/gal at 20.0 mils (2.0 m²/l at 500 microns) 23 ft²/gal at 70.0 mils (0.6 m²/l at 1750 microns) Allow for loss in mixing and application.
VOC Values	**As Supplied** : 2 g/L
Dry Temp. Resistance	Continuous: 203°F (95°C)
Specific Gravity	Base: 1.60±0.03 Hardener: 1.05±0.03 Mixed Material: 1.46±0.03

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SUBSTRATES & SURFACE PREPARATION

Steel	Cleanliness: NACE No.2/SSPC-SP 10, SA 2.5 (ISO 8501-1) Profile: 62.5 microns (2.5 mils) – 125 microns (5.0 mils)
FBE	62.5 microns (2.5 mils) minimum

PERFORMANCE DATA

All test data was generated under laboratory conditions. Field testing results may vary.

Test Method	Results
Adhesion to FBE (Pull Off Strength) (CSA-Z245.20)	28 days @ 95˚C (203˚F): Rating #1
Adhesion to Steel (Hot Water Soak) (CSA-Z245.20)	120 days @ 75˚C (167˚F): Rating #1 28 days @ 75˚C (167˚F): Rating #1
Adhesion to Steel (Pull Off Strength) (ASTM D4541 Type IV)	20 MPa (>3000 psi) @ 25˚C (77˚F)
Cathodic Disbondment Resistance (CSA Z245.20, Clause 12.8)	28 days @ 20˚C (68˚F): 2.2 mmR 28 days @ 95˚C (203˚F): 7.45 mmR
Dielectric Constant (ASTM D150, 60 cycles)	4.2
Dielectric Strength (ASTM D149)	400 volt/mils
Flexibility (CSA Z245.20, Clause 12.11)	0.75˚PPD @ -30˚C (-22˚F)
Impact Resistance (CSA-Z245.20, Clause 12.12)	1.5 Joules (1.11 ft-lbf) @ -30°C (-22°F) 3.0 Joules (2.21 ft-lbf) @ -30˚C (-22˚F): >60 mils for HDD Applications
Shore D Hardness (ASTM D2240)	25˚C (77˚F): 85
Volume Resistivity (ASTM D257)	$1.0x10^{14}$ ohm-cm
Water Absorption (ASTM D570, 24h, R.T.)	<0.1%
Water Vapour Permeability	<0.003 perm-in

Chemical Resistance	No change in various chemical solutions (ASTM G20, 90 day immersion, R.T.)

MIXING & THINNING

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. Component Details for Color: Grey (0700): The Base is Grey (0700) and the Hardener is Amber (0908)
Thinning	Do Not Thin
Ratio	Spray & Brush Grade: 3:1 Base to Hardener, by Volume Cartridge Grade: 2:1 Base to Hardener, by Volume
Pot Life	**Brush Grade:** 18 minutes (200 gms / 7.0 oz) mass @ 25˚C (77˚F)
Gel Time	**Spray Grade:** Base: 2.25 minutes (200 gms / 7.0 oz) mass @ 70˚C (158˚F) Hardener: 2.25 minutes (200 gms / 7.0 oz) mass @ 25˚C (77˚F)

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.

Brush Grade	Brush or Roller
Cartridge	Manual Dispenser
Spray Grade	**Plural Component Spray Equipment:** Graco XP-70 or equivalent Tip Size:: 0.019-0.031 0.031 Heated hose bundle consisting of 3/8” ID base and ¼” ID hardener with a solvent flush line. Glycol heat trace or equivalent capable of 80˚C (176˚F)

APPLICATION CONDITIONS

Condition	Surface	Ambient
Minimum	50°F (10°C)	-40°F (-40°C)
Maximum	212°F (100°C)	122°F (50°C)

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.
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)
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.

CURING SCHEDULE

Surface Temp.	Dry Hard (Brush Grade)	Dry Hard (Spray Grade)
50°F (10°C)	18 Hours	16 Hours
68°F (20°C)	7 Hours	6 Hours
77°F (25°C)	4 Hours	3.5 Hours
86°F (30°C)	3 Hours	2.5 Hours
104°F (40°C)	105 Minutes	1 Hour
122°F (50°C)	35 Minutes	30 Minutes
140°F (60°C)	19 Minutes	12 Minutes
158°F (70°C)	15 Minutes	10 Minutes
176°F (80°C)	12 Minutes	8 Minutes
194°F (90°C)	8 Minutes	4 Minutes

0.50mm (20 mils) DFT as per ASTM D-1640
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

CURING SCHEDULE

Recoat Interval	Brush Grade 25˚C (77˚F): 30 minutes 80˚C (176˚F): 3 minutes Spray Grade 25˚C (77˚F): 30 minutes 80˚C (176˚F): 2 minutes 50% RH 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 product application temperature. Contact your SPC representative for assistance in determining minimum and maximum recoat intervals specific to your application.
Touch Dry	Brush Grade: 50 minutes @ 25˚C (77˚F) Spray Grade: 45 minutes @ 25˚C (77˚F)

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.

PACKAGING, HANDLING & STORAGE

Shelf Life	Part A: 24 months Part B: 24 months Cartridge: 36 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 40°C (104°F). Keep in a tightly sealed container when not in use. DO NOT FREEZE.
Packaging - Brush Grade	**1 Liter (0.26 Gallon) Kit** Part A: 0.75 liters (0.2 gallons) Part B: 0.25 liters (0.06 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	**450 mL (0.12 Gallon) (Cartridge Grade)** Part A: 300 mL (0.08 gallons) Part B: 150 mL (0.04 gallons)
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)

WARRANTY

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