PRODUCT INFORMATION

Generic Type	Fast curing ceramic modified epoxy novolac designed for mainline and field pipeline joints in high temperature service.
Description	Powercrete® R-150 is a high-build solvent free novolac hybrid epoxy coating designed for protecting new pipelines and rehabilitation projects that operates at temperatures up to 150 ˚C [302 ˚F]. Powercrete® R-150 can be used for extra protection on top of FBE mainline coatings or as a DTM (direct to metal) coating when an increased temperature-and chemical resistance is required. Powercrete R-150 is a corrosion preventative coating system for pipelines, bends, fittings, valves, girth welds, field joints, directional drilling, buried tanks and vessels, offshore risers, piles, waste water pipes, sulphur hoppers and chutes, and other steel structures in need of protection at operational temperatures up to 150 °C [302 °F]. Powercrete R-150 is compliant with DIN EN 10289 “Steel Tubes and Fittings for Onshore and Offshore Pipelines” Powercrete R-150 meets the requirements of ISO 21809-3:2016 coating type 18A. Powercrete R-150 meets the requirements of CSA Z 245.30 system FC2, elevated temperature service up to 150 ◦C.
Features	• 100% Solids Novolac Epoxy • No VOC • High temperature and chemical resistance • Excellent adhesion to FBE and abrasive blasted steel • Excellent cathodic disbondment characteristics • Excellent wastewater and sulphuric acid resistance • Can be used in directional drill and thrust bore applications • Suitable for pipeline operating temperatures to 150 °C [302 °F] • Can be sprayed and hand applied up to 1000 µm [40 mils] in one multi-pass layer • Powercrete R-150 is compliant with DIN EN 10289 “Steel Tubes and Fittings for Onshore and Offshore Pipelines” • Powercrete R-150 meets the requirements of ISO 21809-3:2016 coating type 18A.

	• Powercrete R-150 meets the requirements of CSA Z 245.30 system FC2, elevated temperature service up to 150 ◦C.
Colour	Grey and other colours MTO.
Finish	Gloss
Primer	No primer necessary on FBE, liquid epoxy and direct to metal
Dry Film Thickness	25 – 40 mils (625 - 1000 µm) for most applications in multicoat application For higher dry film thickness consult Seal For Life representative.
Solids by Volume	100 %
Theoretical Coverage Rate	64.2 ft^2 per Gallon at 25 mils (625 µm) thickness (DFT) 40.1 ft^2 per Gallon at 40 mils (500 µm) thickness (DFT)
Severe Exposures	Maximum service temperature 150 ° C (300 °F)
VOC Values	0 g/l (No recordable VOC values)
Limitations	Epoxies lose gloss, discolor and eventually chalk in sunlight exposure. If the coating is going to be exposed more than 6 months a polyurethane or acrylic top-coat is recommended. Consult Seal for Life Representative.

SUBSTRATE AND SURFACE PREPARATION

General	The area to be coated must be clean, dry, and free from oil, grease, and dust. All contamination that could interfere with the adhesion of the coating has to be removed according to SSPC-SP1.
Preventing Condensation	Prior and during the surface preparation, the temperature of the substrate(s) must be at least 5˚F (3˚C) above the dew point.
Steel	Abrasive blast to SSPC SP 10 (ISO Sa ½ a minimum cleanliness level. The anchor profile shall be angular with a range of 3 – 4 mils (75 to 100 µm) when measure by ASTM D 4417 Method C (Replica Tape).

FBE	Abrasive blast surface following procedures of SSPC SP 7 (ISO Sa 1) removing all the gloss from the surface and obtaining a **dense angular** profile. The anchor profile can be evaluated following procedures of ASTM D 4417 Method C (Replica Tape) obtaining a minimum of 2.0 mils (50 µm).

MIXING AND THINNING

Application Safety	Read the Product Data Sheet and follow the caution statements on the Safety Data Sheet (SDS). Personnel exposed to the product shall wear appropriate protection equipment. Follow best painting practices and safety guidelines.
Mixing Ratio	3.6:1 (A to B in volume) 100:16 (A to B by weight)
Mix each Component	Power mix part A and part B separately until uniform for plural airless spray application and hand application. Do not incorporate air by mixing too fast, warm material will be easier to mix. Hand apply is possible in plant application only for small repair and patch work.
Thinning	No thinning is necessary
Pot Life	14 minutes at 25 °C (77 °F)

APPLICATION EQUIPMENT GUIDELINES

Spray Application	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. Use only heated plural component Airless spray equipment capable to maintain a 3.6:1 ratio in volume and 1.25 Gallon/4,73 Litre per minute output, with heated drums, insulated (heated) hoses, and minimum 193 bar [2800 psi] fluid pressure for Part A and 207 bar [3000 psi] for Part B. Use Graco XRT or Binks Airless spray-gun or equal with preferably changeable spray tips. Consult Seal For Life Industries for specific information. • Transfer pumps (Graco 5:1 or 10:1)

- Agitation (expandable blade mixer)
- Heated drums for A and B
- High pressure filter (60 mesh)
- Hose bundle (A hose =3/4", B hose = 3/8") I.D.
- Static mixers set of 2 – 12" static mixer 3/8" separated by whip hose.
- Whip hose and mixer assembly max length at 20 ft
- High pressure fluid heater and temperature control (5400 watts)
- Spray Temperature (Part A 130 – 180 F and Part B 68 - 86 F)
- Pump Ratio: 56:1 (min.)
- Mix ratio at 3.6:1 by volume
- Volume Output: 4.73 l or 1.25 Gallons per minute as minimum
- Tip Size: (0.021-0.031")
- Pressure: Part A 2500 - 2800 psi (170 Bar); Part B 1800 - 2500 Psi (124 Bar)
- Airless Spray Gun: Graco XRT, Binks or similar

Temperature During Application

Prior to mixing and during application, Part A must be heated up and maintained to a temperature of 60 - 65 ˚C [140 – 150 ˚F], and Part B must be heated up and maintained to 38 – 49 ˚C [100 – 120 ˚F].

Spray Cartridge Application

POWERCRETE® R-150 can be applied by Cartridge Spray System. Consult Cartridge Spray Guide instructions guide for Powercrete® R-150.

Hand and Cartridge Application

POWERCRETE® R-150 can be applied with brush or roller. For small repairs application, follow Hand application or Cartridge application instructions guide for Powercrete® R-150.

Cleaning Solvent

Use Acetone or MEK.

APPLICATION CONDITIONS

	Product	Surface	Ambient	Humidity
Optimum	140˚F* (60˚C)	70-90˚F (21-32˚C)	70-90˚F (21-32˚C)	25-50%
Minimum	130˚F (55˚C)	50˚F (10˚C)*	35˚F (2˚C)	0%
Maximum	150˚F (65˚C)	176˚F (80˚C)	120˚F (49˚C)	85%

* If the surface to be coated is below 10˚C (50˚F), preheating of the substrate is recommended. Preheat temperatures should not exceed 93˚C (200˚F). Prior and during the application, the temperature of the substrate must be at least 3˚C above the dew point.
*This temperature does not refer to hand application.

Curing Schedule

Gel Time	31 minutes at 25 ˚C (77 ˚F)
Dry to Touch	1.3 hours at 25 ˚C (77 ˚F)
65 Shore D Hardness	2.2 hour at 25 ˚C (77 ˚F) – Ready for Holiday Testing
75 Shore D Hardness	5.0 hours at 25 ˚C (77 ˚F) – Full Cure ready for handle
Recoat Interval	34 – 60 minutes at 21 ◦C (70 ◦F)
Note	Cure time is based on 40 mils (1000micron) DFT. Recoat interval at 21˚C (70˚F) is 26 – 83 minutes and 7-10 minutes at 65˚C (150˚F). Consult POWERCRETE® R-150 Gel, Re-Coat and Curing Time Chart for more specific information. **Warning: Under 4 ◦C (40 ◦F) coating mixture is frozen, and no chemical reaction will occur**.

Temperature	Gel Time	Min. Recoat Time	Max. Recoat Time	Dry to Touch	Time to 65 Shore D	Time to 75 Shore D
50 ˚F (10 ˚C)	Material is too viscous to handle					
60 ˚F (16 ˚C)	75 min	70 min	1.6 hrs	2.25 hrs	20 hrs	24 hrs
65 ˚F (18 ˚C)	44 min	40 min	1.3 hrs	2.15 hrs	5 hrs	9.2 hrs
70 ˚F (21 ˚C)	39 min	34 min	1 hr	1.6 hrs	4 hrs	8 hrs
80 ˚F (27 ˚C)	31 min	29 min	45 min	1.2 hrs	2.2 hrs	5 hrs
90 ˚F (32 ˚C)	21 min	17 min	35 min	56 min	1.5 hrs	2 hrs
100˚F (38 ˚C)	19 min	16 min	28 min	40 min	1 hr	1.1 hrs
110˚F (43 ˚C)	14 min	12 min	21 min	30 min	50 min	1 hr

This information refers to spray application, the cure rate accelerates as temperature and dry film thickness increase. Touch-up of holidays can occur then as well or any time the coating is firm enough to resist damage from the procedure. Full cure will take place according to the table above. Over-coating after the maximum recoat time requires that the surface be abraded prior to application. Use a medium grit, 60 to 80 grit paper or sweep blast to roughen the surface. Clean abraded area of dust before re-coat or repair. (For more information consult the Cure-Gel Time chart for Powercrete® R-150)

INSPECTION AND REPAIR

Inspection	The finished coating must be visually inspected for any defects, such as runs and sags, fisheyes, blistering, pinholes, missed spots and possible contaminants. Pinhole/Holiday detection must generate according to NACE SP0188 High Voltage Modality or specified standard.
Coating Thickness	The coating thickness (DFT) must be within the specified DFT range. Use calibrated equipment and measure according to SSPC-PA 2 or other specified standard.
Cure to Handling	Transport and stacking is possible after full cure of the coating and generating a Holiday test (NACE SP0188). This time can be reduced by increasing the curing temperature. Consult Seal For Life for specific information.
Repair	Pinholes/Holidays must be located and repaired with Powercrete® R-150, or approved material. Consult Powercrete® for specific information. Retest the repaired area. Consult the POWERCRETE® R-150 Repair Instructions.

CLEAN UP AND SAFETY

Cleaning	Use MEK, Acetone or Xylene/MEK mixtures. In case of spillage, absorb and dispose of in accordance with local applicable regulations
Safety	Read and follow all caution statements on this product data sheet and on the SDS for this product. Employ normal workmanlike safety precautions. Hypersensitive persons should wear protective clothing, gloves and use protective cream on face, hands, and all exposed areas.
Ventilation	When use cleaning solvent in enclosed areas, thorough air circulation must be used. The ventilation system should be capable of preventing the solvent vapor concentration from reaching the lower explosion limit for the solvents used. User should test and monitor exposure levels to in sure all personnel are below guidelines.

PACKAGING, HANDLING AND STORAGE

Shelf Life

Store indoor, clean and dry, away from direct sunlight in a cool place. Keep from freezing. Shelf life 24 months in the original unopened containers.

Storage Temperature and Humidity

18-30°C (65-85˚F)

Storage

Indoors and keep dry

Shipping Weight

Powercrete® R-150

Product dimensions and contents:

Drum		
Part A	40.4 gal/153,0 l	(625l b/283.5 kg)
Part B	46.5 gal/176,0 l	(400 lb/181.4 kg)
Pail		
Part A	4.0 gal/15.1 l	(61.7 lb/28 kg)
Part B	4.6 gal/17.4 l	(39.7 lb/18 kg)
Kits Options		
Part A+B		
1 Lts	0.26 gal/1,0 l	(3.6 lb/1,6 kg)
½ lt	0.13 gal/0,5 l	(1.8 lb/0,8 kg)
Cartridges	400 ml	
	940 ml	

Flash Point

Mixed Material >446˚F (230 ˚C) mixed product
Part A > 199˚F (93˚C)
Part B > 199˚F (93˚C)

ADDITIONAL INFORMATION

Documentation	Application instructions and other documentation can be obtained by contacting our head office, from our local distributor or by sending email to info@sealforlife.com
Certified staff	Application of the described coating system should be carried out and inspected by certified personnel.

DISCLAIMER

Seal For Life Industries warrants that the product(s) represented within conform(s) to its/their chemical and physical description and is appropriate for the use as stated on the respective technical data sheet when used in compliance with Seal For Life Industries written instructions. Since many installation factors are beyond the control of Seal For Life Industries, the user is obligated to determine the suitability of the products for the intended use and assume all risks and liabilities in connection herewith. Seal For Life Industries liability is stated in the standard terms and conditions of sale. Seal For Life Industries makes no other warranty either expressed or implied. All information contained in the respective technical data sheet(s) should be used as a guide and is subject to change without notice. This document supersedes all previous revisions. Please see revision date on the left. Powercrete® is a registered trademark of Seal For Life Industries.