Powercrete®
Liquid Pipeline Coating Technology

PRODUCT DATA SHEET

POWERCRETE® R-95

Product Information

Product description: Powercrete® R-95 is a high-build solvent free novolac epoxy coating designed for protecting new line pipes and pipeline rehabilitation projects that operates at temperatures up to 95 ˚C [203 ˚F]. Powercrete® R-95 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.

Features and Benefits:

- 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
- Suitable for pipeline operating temperatures to 95 °C [203 °F]
- Can be sprayed and hand applied up to 1000 µm [40 mils] in one multi-pass layer

Product certificates
Powercrete R-95 meets the minimum requirements of ISO 21809-3:2016 coating type 18A.

Application examples

Steel structures: 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 95°C [203°F].

General product information

Colour	Grey
Finish	Gloss
Primer	Self-priming on many substrates like steel and FBE
Dry Film Thickness	DFT - typical 1000 µm [40 mils] for most applications
Coverage Rate (theoretical)	1.00 m²/l at 1000 µm [40 mils] DFT 40.8 sq.ft/US gallon at 40 mils [1000 µm] DFT
Volume Solids	100%
Mixing Ratio	3.6:1 (Part A to Part B in volume) 100:16 (Part A to Part B in weight)
VOC Content	0%
Flash Point	154 °C [309 °F]
Pot Life	14 minutes at 25 °C [77 °F]

Application conditions

	Product	Substrate [A]	Ambient	Humidity
Optimum	55 °C 130 °F	21 – 32 °C 70 – 90 °F	21 – 32 °C 70 – 90 °F	25 – 50 %
Minimum	50 °C 122 °F	10 °C [B] 50 °F [B]	- 30 °C - 20 °F	0 %
Maximum	60 °C 140 °F	93 °C 200 °F	49 °C 120 °F	85 %

[A] Prior and during the application, the temperature of the substrate must be at least 3˚C [6 °F] above the dew point.
[B] 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].

Performance of Powercrete® R-95 (tested under laboratory conditions)

Property	Method	Conditions	Typical value
Thickness	ISO 21809-3	--	1000 µm [40 mils]
Holiday Detection	NACE SP0188	HV spark test @ 3 kV	No holidays
Impact Resistance	ASTM G14	@23 °C [73 °F]	≥ 44.25 in.-lb
Indentation Resistance	ISO 21809-3	@95 °C [203°F] and 10 N/mm² [1450 psi]	≤ 13 % DFT
Cathodic Disbondment Resistance	ASTM G8	30 d @ 25 °C [77 °F]	3 mm [⅛"]
	ASTM G95	30 d @ 95 °C [203 °F]	8 mm [5⁄16"]
Hardness	ASTM D2240 ISO 868 [A]	@ 23 °C [73 °F]	85 shore D
Adhesion to Steel	ASTM D4541 ISO 4624 [A]	@ 23 °C [73 °F]	3500 psi 24 MPa
Adhesion to Steel after Hot Water Immersion	ISO 21809-3 ISO 4624 [A]	28 d @ 95 °C [203 °F] Test @ 23 °C [73 °F]	18 MPa [2600 psi]
Adhesion to FBE	ASTM D4541 ISO 4624 [A]	@ 23 °C [73 °F]	3000 psi 20 MPa
Adhesion to Liquid Epoxy Coating	ASTM D4541 ISO 4624 [A]	@ 23 °C [73 °F]	3000 psi 20 MPa
Adhesion to Polyolefin Coating	ASTM D4541 ISO 4624 [A]	@ 23 °C [73 °F]	3.5 MPa [500 psi]
Adhesion to Polyolefin Coating after Hot Water Immersion	ISO 21809-3 ISO 4624 [A]	28 d @ 95 °C [203 °F] Test @ 23 °C [73 °F]	2.0 MPa [290 psi]
Flexibility	NACE SP0394	@ 23 °C [73 °F]	0.27 / PD
Abrasion Resistance	ASTM D4060	@ 23 °C [73 °F]	34 cycles/µm [850 cycles/mil]
Dielectric Strength	ASTM D149	--	27 V/µm [690 V/mil]
Water Absorption	ASTM D570	24 h @ 23 °C [73 °F]	0.15 %
Resistance to Acids and Alkalis	ASTM C581	--	Excellent

General order information

Product		Powercrete® R-95 is available as Product dimensions and contents:	
Drum			
	Part A	40.4 gal / 153 l	[625 lb / 283.5 kg]
	Part B	46.5 gal / 176 l	[400 lb / 181.4 kg]
Pail			
	Part A	4.0 gal / 15.1 l	[61.7 lb / 28.0 kg]
	Part B	4.6 gal / 17.4 l	[39.7 lb / 18.0 kg]
Kit options			
	Part A + Part B	0.52 gal / 2.0 l	[7.2 lb / 3.3 kg]
		0.26 gal / 1.0 l	[3.6 lb / 1.6 kg]
		0.13 gal / 0.5 l	[1.8 lb / 0.8 kg]
Cartridges			
	Part A + Part B	On request	
Handling		See Safety Data Sheets of both Part A and Part B for specific handling instructions. Handle with care. Keep containers upright.	
Storage		See Safety Data Sheets of both Part A and Part B for specific storage instructions. Store indoor, clean and dry, away from direct sunlight in a cool place between +18 and +30 °C [64 to 86 °F]. Keep from freezing. Shelf life 24 months in original unopened containers.	

Application instruction – Job preparation	
OHSE measures	See Safety Data Sheets (SDS) of both Part A and Part B for applicable Occupational Health, Safety and Environmental measures in accordance with national regulations. Personnel that will come in contact with the products must wear appropriate personal protective gear.
Surface pre-cleaning	The area to be coated must be clean, dry, and free from oil, grease and dust. All contamination that could interfere with adhesion of the coating must be removed in accordance with SSPC-SP1 (solvent cleaning) prior to further surface preparation.
Preventing condensation of water	Prior to and during the application, the temperature of the substrate(s) must be at least 3 °C [6 °F] above the dew point.

Application instruction - Surface preparation of Steel	
Abrasive Blast Cleaning	Minimum cleanliness Sa 2½ (ISO 8501-1) respectively SSPC-SP10/NACE No.2 near white blast cleaning.
Recommended Surface Profile	3 – 4 mils [75 – 100 µm] angular profile

Application instruction – Surface preparation of FBE	
Abrasive Blast Cleaning	For optimum performance Sa 1 (ISO 8501-1) respectively SSPC-SP7/NACE No. 4 brush-off blast cleaning.
Recommended Surface Profile	Minimum 2 mils [50 µm] angular profile

Application instruction – Plural Component Spray	
Product Temperature	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 Equipment	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 Binks 1M Airless spray-gun or equal with preferably changeable spray tips. Consult Seal For Life Industries for specific information.
Mixing	Mix Part A and B until uniform in consistency.
Application	Apply Powercrete® R-95 in the recommended DFT. Use a Wet Film Thickness gauge to check. Do not dilute the product.
Cleaning	Use Acetone or MEK.

Curing times	
Based on 40 mils [1000 µm] Dry Film Thickness	
Gel Time	At 25 °C [77 °F]: 31 minutes
Dry to Touch	At 25 °C [77 °F]: 1.3 hours
65 shore D	At 25 °C [77 °F]: 2.2 hours (ready for holiday test)
≥ 75 shore D	At 25 °C [77 °F]: 5.0 hours (full cure)
Recoat Interval	At 21˚C [70˚F]: 34 – 60 minutes At 65˚C [150˚F]: 4 - 7 minutes

Inspection and repair	
Visual Inspection	The finished coating must be visually inspected for any defects, such as runs and sags, fisheyes, blistering, pinholes, missed spots and possible contaminants.
Holidays	Pinhole / Holiday detection must be conducted in accordance with NACE SP0188.
Thickness	The coating thickness (DFT) must be within the specified DFT range. Use calibrated equipment and measure in accordance with SSPC-PA 2 or other specified standard.
Repair	Pinholes/Holidays must be located and repaired with approved material. Consult Seal For Life Industries for specific information. Inspect and retest the repaired area.

Handling and commissioning	
Handling	Transport and stacking is possible after full cure of the coating and after performing a Holiday test. Curing time can be reduced by increasing the curing temperature. Consult Seal For Life Industries for specific information.
Immersion or burying	Immersion or burying is possible immediately after full cure of the coating. Backfill and compact with clean sand and filling material without sharp stones or hard lumps of soil.

Information	
Documentation	Extensive information is available on our web-site. 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.
Specification info	Product Performance values shown are not to be interpreted as product specification or PQT values. Consult Seal For Life Industries for details.

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