

Powercrete® R-120 Liquid Epoxy



Product Description

Powercrete R-120 is a single coat, 100% solids, high build epoxy novolac that coats, repairs and rehabilitates pipelines operating at maximum temperatures up to 120°C (250°F). As an abrasion resistant overlay (ARO) it is compatible with FBE and CTE mainline coatings and is used on any other metal structure. This 2-component, solvent-free epoxy can easily achieve a dry film thickness of 40+ mils in a single application and can be hand or spray applied.

Product Applications

- Pipeline Repair & Rehabilitation
- Girth Welds / Field Joints
- Pipe Bends, Fittings, Valves & Odd Shapes
- Any bare steel structure in need of protection

Product Features & Benefits

- 100% Solids Epoxy, no V.O.C.s and no isocyanates
Safe to use
- Novolac Chemistry
Greater surface tolerance and chemical resistance
- Excellent Wetting Properties to Bare Steel
Exceptional adhesion and cathodic disbondment resistance
- Same Formula for Hand or Spray Application
Reduce inventory
Easy selection to avoid errors
- High Build in a Single Application
Save time by applying 40+ mils in a single pass
- Excellent Mechanical Properties
Used in directional drill and thrust bore applications



Physical Properties

| Property | Condition | Test Method | Typical Value | |
|--------------------------------|-----------------------------|----------------|----------------|-------------------|
| | | | US Imperial | Metric |
| Specific Gravity | (Mixed) | ASTM D-3289-03 | 1.64 | 1.64 |
| Compressive Strength | | ASTM C-109 | 14,660 psi | 110 MPa |
| Hardness | (Shore D) | ASTM D-2240 | 85 | 85 |
| Thin Film Water Absorption | 24 Hrs | ASTM D-570 | 0.15 % | 0.15 % |
| Dielectric Strength | (Oil) | ASTM D-149 | 690 volts/mil | 27 volts/micron |
| Resistance to Acids & Alkalies | | ASTM C-581 | Excellent | Excellent |
| Adhesion to | | | | |
| FBE | | ASTM D-4541 | 3,400 psi | 23.44 MPa |
| Bare Steel | | ASTM D-4541 | 3,550 psi | 24.48 MPa |
| Impact Resistance | (40 mils thickness) | ASTM G-14-88 | 57 inch lbs | 6.4 Nm/6.4 Joules |
| Flexibility | (Degrees per pipe diameter) | NACE RP-0394 | < 0.6 ° | < 0.6 ° |
| Tabor Abrasion | (CS-17 wheel, wear cycles) | ASTM D-4060-95 | 780 cycles/mil | 30 cycles/micron |
| Cathodic Disbondment | 30 days | | | |
| 23°C (73°F) | | ASTM G-8 | 0.2 inch | 4.0 mm |
| 95°C (203°F) | | ASTM G-42 | 0.3 inch | 8.0 mm |
| 120°C (250°F) | | ASTM G-42 | 0.4 inch | 10 mm |

Product Selection Guide

| | | | |
|-----------------------------|----------------------|-------------------------------|------------------|
| Maximum Operating Temp | 120°C (250°F) | Color | Gray |
| Compatible Line Coatings | FBE, CTE | Typical Single Coat Thickness | |
| Mixing Ratio | | Manually Applied | 40 mils (1.0 mm) |
| By Volume | 3.6:1 Part A to B | Spray Applied | 40 mils (1.0 mm) |
| By Weight | 100:16 Part A to B | Recoat Interval (Spray) | |
| Surface Profile Recommended | 2.5 - 4.0 mils | @ 21°C, 70°F | 34 - 60 minutes |
| | 63.5 - 101.6 microns | @ 65°C, 150°F | 4 - 7 minutes |
| Surface Preparation | SA 2 1/2 | Clean Up | Acetone, MEK |
| | SSPC-10 - Near-White | | |
| | SSPC-SP5 - White | | |

Typical Application

| Hand Apply | | Spray Apply | Waste Factor | | | | | | | | | | | | | | |
|---|--|---|---|----------------|----------------------|-----|----------------|----------------------|-----------------|---------------------|----------------------|---------|---------------------|--|---------|----------------------|--|
|  | Theoretical Coverage Rates 425 mil-sq. ft./litre 1605 mil-sq. ft./US gallon 1.0 mm-m ² /litre | | (approx.) <table border="1"> <tr> <td>10%</td> <td>Kit Application</td> </tr> <tr> <td>15%</td> <td>20" + pipe OD</td> </tr> <tr> <td>25%</td> <td>14"-18" pipe OD</td> </tr> <tr> <td>35%</td> <td>2"-12" pipe OD</td> </tr> </table> | 10% | Kit Application | 15% | 20" + pipe OD | 25% | 14"-18" pipe OD | 35% | 2"-12" pipe OD | | | | | | |
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| | 15% | 20" + pipe OD | | | | | | | | | | | | | | | |
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| Recommended Tip Sizes | | <table border="1"> <tr> <td>Tip Size</td> <td>Pipe Size (DN)</td> <td>Flow Rates (approx.)</td> </tr> <tr> <td>331</td> <td>to 12" (DN300)</td> <td>19tip = 1.1 L / min.</td> </tr> <tr> <td>419/431</td> <td>12"-16" (DN300-400)</td> <td>31tip = 2.8 L / min.</td> </tr> <tr> <td>519/531</td> <td>16"-24" (DN400-600)</td> <td></td> </tr> <tr> <td>619/631</td> <td>24"-48" (DN600-1200)</td> <td></td> </tr> </table> Note: Fluid pressure at tip Approx. 3,500 psi. | Tip Size | Pipe Size (DN) | Flow Rates (approx.) | 331 | to 12" (DN300) | 19tip = 1.1 L / min. | 419/431 | 12"-16" (DN300-400) | 31tip = 2.8 L / min. | 519/531 | 16"-24" (DN400-600) | | 619/631 | 24"-48" (DN600-1200) | |
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| | |  | | | | | | | | | | | | | | | |

Temperature Considerations

If the surface to be coated is below 10°C (50°F), preheating of the substrate is recommended. Preheat temperatures should not exceed 100°C (212°F) prior to the application.

Note: The application should only be done when the temperature of the steel is at least 3°C (5°F) higher than the dew point, as recommended by NACE.

Storage & Handling

For optimum performance, store Powercrete® R-120 epoxy products in a dry, well-ventilated area. Maintain products in original packaging and sealed until just before use. Avoid exposure to direct sunlight, rain, snow, dust or other adverse environmental conditions or contaminants.

NOTE:
Avoid prolonged storage at temperatures above 40°C (104°F) or below 5°C (40°F).

Cure Times

| | |
|--|------------------------------|
| Pot Life: 4 Lbs Kit (1.82 Kg), @ 25°C (77°F) | 14 minutes |
| Spray Application | |
| Gel Time: 40 mils, @ 27°C (80°F) | 31 minutes |
| Dry Time: 40 mils, @ 27°C (80°F) | 77 minutes |
| 65 Shore "D" Reading: 40 mils, @ 27°C (80°F) | 2.2 hours |
| 75 Shore "D" Reading: 40 mils, @ 27°C (80°F) | 5 hours |
| Application Temp Range: | -30 to 100°C -20 to 212°F |
| Shelf Life (stored in specified conditions): | 2 years |

Ordering Information

Powercrete R-120 is available in three (3) packaging options:

Drum

- Part A: 40 Gal / 153 L (625 Lbs / 283.5 Kg)
- Part B: 46 Gal / 176 L (400 Lbs / 181.4 Kg)

Pail

- Part A: 4 Gal / 15.1 L (61.7 Lbs / 28 Kg)
- Part B: 4.6 Gal / 17.4 L (39.5 Lbs / 18 Kg)

Kit Options (Part A and B in proper mix ratio by weight)

- 20 Lbs / 9 Kg (1.44 Gal / 5.44 L)
- 10 Lbs / 4.5 Kg (0.72 Gal / 2.7 L)
- 4 Lbs / 1.8 Kg (0.29 Gal / 1.09 L)
- 2 Lbs / 0.9 Kg (0.14 Gal / 0.54 L)



Berry Plastics warrants that the product conforms to its chemical and physical description and is appropriate for the use stated on the technical data sheet when used in compliance with Berry Plastics written instructions. Since many installation factors are beyond the control of Berry Plastics, the user shall determine the suitability of the products for the intended use and assume all risks and liabilities in connection herewith. Berry Plastics liability is stated in the standard terms and conditions of sale. Berry Plastics makes no other warranty either expressed or implied. All information contained in this technical data sheet is to be used as a guide and is subject to change without notice. This technical data sheet supersedes all previous data sheets on this product.



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