

SPECIFICATION FOR THE EXTERNAL COATING OF YARD APPLIED POWERCRETE OVER FUSION BONDED EPOXY OR OTHER APPROVED PRIMARY COATINGS

1.0 Scope

- 1.1 This specification covers the requirements for the spray application of Powercrete, a polymer concrete coating.
- 1.2 Contractor shall furnish all labor, supervision, materials, equipment and related hardware required for completing an acceptable coating.
- 1.3 Coating materials shall be plainly and permanently marked, stored, and applied in a concordance with the manufacturer's specification as directed by the Company's authorized representative.

2.0 Surface Preparation

- 2.1 When the primary coating has been applied less than six (6) days prior, the surface shall be cleaned and free of all contaminants. If solvent is used, it shall be without residue. Following cleaning, the coating shall be examined for U. V. degradation (fading or crazing). If degradation is observed, see 2.2 for correction.
- 2.2 If the primary coating was applied six (6) or more days prior and the coated pipe was exposed to sunlight (or other U. V. source) the U. V. affected FBE surface shall be removed before Powercrete can be applied. The damaged surface shall be removed by lightly blasting (sweep blasting) with an air or rotary blaster using an appropriate angular material (not shot).
- 2.3 As an alternative to blasting, the coating shall be thoroughly abraded using an abrasive coated organic pad, equivalent to 3M scrubbing pad or medium grit emery cloth. Following blasting or abrading, the FBE coating shall be thoroughly cleaned using compressed air or water. If water is used on the coated pipe, the pipe shall be completely dry.
- 2.4. Following cleaning, no dust or other particles shall be visible on the surface of a clear adhesive tape that has been pressed on the surface of the FBE coating and removed for observation.
- 2.5 Immediately prior to the application of Powercrete the primary pipe coating shall be 100% inspected for holidays, pinholes, and other damage, subject to the same procedure for holiday inspection of the original coating. The repair procedure for discontinuous primary coating shall be identical to the repair during application of the original coating.

3.0 Coating Application

- 3.1 The pipe shall be preheated to ensure that no surface moisture is present during the actual coating application. Under no conditions shall the coating be applied to a pipe surface temperature above 160°F (71°C).
- 3.2 The freshly coated areas shall be protected from being contaminated with dust or other foreign debris. Excessive particle contamination shall require stripping, reblasting, and recoating (see 4.0)
- 3.3 Pipe shall be coated immediately after heating using a spray gun or other methods acceptable to the Company.
- 3.4 The first layer shall be applied uniformly to a thickness that will not cause running of material. Applications shall be facilitated with a hand trowel or other tools if necessary.
- 3.5 Successive layers of 20-40 mils shall be applied allowing 10 minutes between applications until desired thickness is achieved.

Liquid Epoxy Coating for the Protection of Fusion Bonded Epoxy in Directional Drilling Applications

- 3.6 Cured coating shall be of uniform color, gloss, and thickness and shall be free of blisters, pinholes, fish eyes, sags, pimples, craters, and other irregularities. It is understood that contact with moisture after application may cause discoloration without affecting the quality of the coating.
- 3.7 The Powercrete coatings shall reach a minimum hardness of 65 (Type D Durometer—ASTM D2240) prior to handling.
- 3.8 The Powercrete coating shall reach a minimum hardness of 75 (Type D Durometer—ASTM D2240) prior to installation.
- 3.9 Any joint of pipe having less than the specified minimum hardness shall, at the Company's option be retested after 24 hours, or have the defective coating removed and reapplied as per this specification.

4.0 Inspection

- 4.1. All work done under this specification shall be subject to inspection and acceptance by the Company's inspector. All parts of the Coating Applicator's facilities associated with this work shall be accessible to the inspector. The Coating Applicator shall correct work which is found defective under this specification or with in the obvious intent of this specification.
- 4.2 The Coating Applicator's quality control inspector shall advise the Applicator's foreman when conditions exist which adversely affect the coating operation with respect to cleaning, application, or material performance, so that immediate corrective measures can be taken.
- 4.3 Coating thickness checks shall be made at an ambient temperature with a magnetic pull-off film thickness gauge that has been calibrated with in the previous 24 hours, or immediately if mishandled, using a U.S. Bureau of Standards Certified Coating Calibration Standard. The thickness of the calibration standard shall be at the upper and lower end of the specified thickness range. Thickness measurements shall be made in accordance with SSPC-PA2, Section 2. The thickness measurements shall be taken at the 12 o'clock and 6 o'clock positions.
- 4.4 Coating hardness checks shall be made at an ambient temperature with a Type D Durometer (ASTM D2240), lab calibrated with in the previous sixty (60) working days and verified daily, in good working condition and with no obvious damage. The checks shall be made at the 12 o'clock and 6 o'clock positions.

5.0 Repairs

- 5.1. All damage detected by visual inspection shall be repaired by the Applicator.
- 5.2 Scars, dents, damaged areas, and large holidays shall be cleaned by removing all rust, scale, dirt or other foreign material and loose coating by using hand or power driven wire brush. The area to be patched (holiday plus at least 3/4 inch {19 mm} of surrounding coating) shall be suitably roughened before patching with 120 grit "wet" or "dry" sandpaper or similar. Files shall not be used. Dust generated by the sanding shall be removed with a clean, dry cloth or brush prior to patching.
- 5.3 Areas not meeting hardness requirements shall be removed using a method that will not damage the primary coating or pipe.
- 5.4 Powercrete® J, J-HB, R95 shall be used for patching holiday and damaged coating. If not available at the time, repairs shall be made with liquid epoxies that are compatible with Powercrete®. In all cases, end user specification shall supersede this specification.



Powercrete® DD Abrasion Resistant Overlay

Liquid Epoxy Coating for the Protection of Fusion Bonded Epoxy in Directional Drilling Applications

- 5.5. The surface to be patched shall be heated with a small torch until it is thoroughly dry. The Powercrete shall be mixed and applied over the heated surface.
- 5.6. Patches shall overlap the surrounding undamaged coating by a minimum of 3/4inch (19 mm).
- 5.7. Repairs shall be reinspected at the discretion of the Company inspector.

6.0 Storage

For optimum performance, store Powercrete® 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).

Safety Guidelines

Important:

Read the MSDS prior to using the products. Product installation should be done in well-ventilated area and in accordance with local health and safety regulations. These application guidelines are intended as a guide for standard products. Consult your Berry Plastics representative for specific projects or unique applications.

Gel, Re-Coat and Curing Time Chart

Testing Temperature	Application Procedure	Gel Time	Re-coat Time Window (In minutes from application time of previous coating pass)	Dry Time	65 Shore "D" Reading	75 Shore "D" Reading
40 °F (4 °C)	Hand	210 min	200 th -----465 th	12 hr	160 hr	180 hr
	Spray	170 min	160 th -----385 th	10 hr	130 hr	165 hr
50 °F (10 °C)	Hand	135 min	125 th -----308 th	8 hr	144 hr	168 hr
	Spray	100 min	90 th -----260 th	7 hr	120 hr	144 hr
60 °F (16 °C)	Hand	90 min	90 th -----225 th	6 hr	38 hr	48 hr
	Spray	50 min	45 th -----175 th	5 hr	31 hr	42 hr
70 °F (21 °C)	Hand	80 min	70 th -----145 th	3hr30 min	17 hr	22 hr
	Spray	42 min	37 th -----111 th	3 hr	13 hr	16 hr
80 °F (27 °C)	Hand	61 min	56 th -----121 st	3 hr	9 hr	12 hr
	Spray	39 min	36 th -----95 th	2hr30 min	7 hr 45 min	10 hr
90 °F (32 °C)	Hand	35 min	32 nd -----93 rd	2hr30 min	8 hr	10 hr
	Spray	32 min	29 th -----76 th	2 hr	7 hr	8 hr 40 min
100 °F (38 °C)	Hand	32 min	29 th -----61 st	1hr50 min	6 hr	7 hr 30 min
	Spray	28 min	25 th -----62 nd	1hr35 min	5 hr 40 min	7 hr 30 min
110 °F (43 °C)	Hand	23 min	20 th -----42 nd	1 hr	3 hr 15 min	4 hr 30 min
	Spray	26 min	23 rd -----36 th	45 min	2 hr 45 min	3 hr 30 min
120 °F (49 °C)	Hand	22 min	19 th -----34 th	45 min	2 hr 15 min	3 hr 15 min
	Spray	20 min	17 th -----30 th	40 min	1 hr 35 min	2 hr
130 °F (54 °C)	Hand	18 min	16 th -----25 th	35 min	1 hr 20 min	2 hr
	Spray	17 min	15 th -----20 th	30 min	46 min	1 hr
140 °F (60 °C)	Hand	16 min	14 th -----25 th	35 min	1 hr	1 hr 30 min
	Spray	16 min	14 th -----15 th	25 min	42 min	48 min
150 °F (66 °C)	Hand	13 min	11 th -----15 th	23 min	45 min	1 hr
	Spray	13 min	11 th -----14 th	18 min	32 min	40 min

WARNING: UNDER 40° F (4° C) COATING MIXTURE IS FROZEN AND NO CHEMICAL REACTION WILL OCCUR

This chart provides an approximate gel and curing times based on conditions outlined above

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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