

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 accordance with the manufacturer's specification as directed by the Company's authorized representative.

2.0 Surface Preparation

- 2.1 The primary coating surface shall be dry, cleaned and free of all contaminants, grease, oil, and salts. Solvent cleaning is strongly recommended. If solvent is used, it shall be without residue and should not leave any traces. Following cleaning, the coating shall be examined for U. V. degradation ((fading, chalking, cracking or crazing)). If degradation is observed, see 2.2 for correction.
- 2.2 If the primary coating 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 blast media (not shot).
- 2.3 The primary coating shall be sweep blasted or abraded using an abrasive coated organic pad, equivalent to 3M scrubbing pad or medium grit sand/emery paper. Following blasting or abrading, the FBE coating shall be thoroughly cleaned using compressed air.
- 2.4. Following surface cleaning, no dust or any other particles shall be visible on the surface. A clear adhesive tape that shall be 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 damaged primary coating application.

3.0 Equipment recommendations

- 3.1 Plural component spray system must be able to spray Powercrete DD at a ratio of 9.75:1 by volume. Graco Extreme Mix spray system will not work properly with Powercrete DD. (Please contact Berry Plastics representative for selection of an appropriate Spray machine.)
- 3.2 The Part A material must be heated (140°F) and agitated continuously before being transferred to the spray unit. The Part B must be warmed (77°F) before being transferred to the spray unit. Make sure the material is not scorched during heating. The material should be transferred with pumps. Material transfer by hand or hand tool should be avoided.
- 3.3 The material must maintain the temperature for atomization during spray. The hose bundle shall be heated to 140°F.
- 3.4 The spray machine filters shall be 60-100 mesh and shall be cleaned at the beginning of each day. The inline static mixers should be cleaned every 5-6 drums of material sprayed.
- 3.5 The recommended spray guns are Binks or Graco. Tips size depends on pipe diameter – 419/431 for 12-16", 519/531 for 16-24", 619/631 for 24-48".

4.0 Coating Application

- 4.1 Perform surface cleaning and application of coating when surface is 3°C (5°F) above dew point, with no surface moisture present, as recommended by NACE. While not always necessary, preheating the pipe area can be useful just prior to application. If the surface to be coated is below 10°C (50°F), preheating of the substrate is recommended. The pipe/area shall be preheated to approx. 40°C (104°F) 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 71°C (160°F). Pipe shall be coated immediately after heating.
- 4.2 The first layer shall be applied uniformly to a thickness that will not cause running/sagging of material. Rotating the pipe during application will eliminate running, sagging, and/or icicles.
- 4.3 Successive layers of 20-40 mils shall be applied allowing 10 minutes between applications until desired thickness is achieved. During application on rotating pipe the coating thickness can be applied at a thicker layer in one pass. Thickness can be measured during application with a wet film thickness gauge.
- 4.4 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)
- 4.5 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. Moisture contacting the freshly applied Powercrete shall be avoided. Contact with moisture after application may cause discoloration without affecting the quality of the coating.
- 4.6 The Powercrete coatings shall reach a minimum hardness of 65 (Type D Durometer—ASTM D2240) prior to handling.
- 4.7 The Powercrete coating shall reach a minimum hardness of 75 (Type D Durometer—ASTMD2240) prior to installation.
- 4.8 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.

5.0 Inspection

- 5.1. 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.
- 5.2 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.
- 5.3 Coating thickness checks shall be made at an ambient temperature with a magnetic pull-off film thickness gauge that has been calibrated within 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 beat 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.
- 5.4 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.
- 5.5 Holiday Inspection shall be performed as per NACE RP0490.

6.0 Repairs

- 6.1. All damage detected by visual inspection shall be repaired by the Applicator.
- 6.2. 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 1 inch {25 mm} of surrounding coating) shall be suitably roughened before patching with 60 grit 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.
- 6.3. Areas not meeting hardness requirements shall be removed using a method that will not damage the primary coating or pipe.
- 6.4. Powercrete DD or any other Powercrete material (in consultation with manufacturer) shall be used for patching holidays and damaged coating. In all cases, end user specification shall supersede this specification.
- 6.5. The surface to be patched shall be heated with a small torch until it is thoroughly dry, without damaging surrounding surface/coating. The Powercrete shall be mixed and applied over the heated surface.
- 6.6. Patches shall overlap the surrounding undamaged coating by a minimum of 1 inch (25 mm).
- 6.7. Repairs shall be inspected at the discretion of the Company inspector.

7.0 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 - Corrosion Protection Group representative for specific projects or unique applications.



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