REMR MATERIAL DATA SHEET CM-CR-1.8

Powerlastic

1. NAME

Powerlastic

2. MANUFACTURER

Powercrete
P.O. Box 44609
Atlanta, GA 30336-5609
Telephone: 1-800-542-3057

3. DESCRIPTION

Powerlastic is a high-build, elastomeric, decorative coating for concrete and masonry structures. Powerlastic is available in five textures (smooth, fine, sand, coarse, and freeform) and 390 architectural colors. Based on a highly flexible acrylic polymer capable of bridging hairline cracks, Powerlastic is an integral part of Powercrete's protective system.

4. USES AND LIMITATIONS

Uses: Powerlastic is used as a decorative coating for the rehabilitation of cracked vertical concrete and masonry structures.

Limitations: Ambient and surface temperatures must be 38 °F or above during application. Powerlastic will not bridge cracks greater than 1/32 in.

5. MANUFACTURER'S TECHNICAL DATA

Technical Data:

Property	Test Method	Test Criteria	Test Results
Shore A hardness	ASTM D 2240	28 days	50 to 55
Tensile strength (psi)	ASTM D 412	14 days	225
Elongation (%)	ASTM D 412	14 days, 77 °F	450
Recovery (%)	ASTM D 412	100% elongation	70
Adhesive to concrete (psi)	ASTM D 4541	28 days	200
Water-vapor transmission (U.S. perms)	ASTM E 96		10.2
1/8-in. Mandrel bend	ASTM D 522	-22 °F 32 °F 86 °F	Pass Pass Pass
Solids by weight fungus resistance (%)	 TT-C-555B		61 No growth
Accelerated weathering	ASTM G 26	500 hr	No checking or cracking, 98% Reflectance retained, chalking=6
Wind-driven rain	TT-C-533B	24 hr	No water leakage, weight gain=0.10 lb

The shelf life of the material in an unopened container is 12 months. The working time of the material is approximately 10 to 45 min depending upon ambient conditions and surface conditions.

6. MANUFACTURER'S GUIDANCE FOR APPLICATION

Surface preparation for new surfaces:

(a) Concrete surfaces: All new concrete surfaces must be cured for a period of 14 days in mild environments (60 to 90 °F with low humidity), 28 days in harsh environments (40 to 60 °F or extreme humidity). All form release and curing agents must be removed prior to application. Surfaces to receive coating must be cleaned of any dirt, dust, laitance, or any other foreign substance that may prevent bond. This may be achieved by washing with an alkaline detergent designed for use on concrete surfaces followed by a low-pressure water blast. All surface defects shall be patched with Powermix Gel Patch. Any protrusions must be ground flush to make a smooth surface profile. Large amounts of bugholes/imperfections should be leveled with Powermix Leveler, Powerfix Base, or Powerfix EGC. Extremely soiled or deteriorated surfaces should be sandblasted to return to sound, clean concrete.

(b) Stucco: New cementitious stucco may be coated after a 28-day curing period has elapsed. All dirt, laitance, and foreign substances must be removed to ensure proper bond of finish coating. This may be achieved by cleaning with an alkaline detergent cleaner made specifically for masonry surfaces followed by a low-pressure water blast. Extremely soiled or difficult strains may be removed by sandblasting to return to a sound, clean surface. Sanding surfaces shall receive an application of Powerprep H. Leveling may be done if desired or necessary with Powerfix Base or Powerfix EGC.

(c) Concrete block: The coating of new concrete block depends upon the type of mortar used in construction. A period of 14 to 28 days is needed for the curing of the mortar before coating should be attempted. Any washing of the new block structure should be done with a commercial cleaning product, followed by a high-pressure wash. No muriatic acid is to be allowed. Any efflorescence that may occur should be removed by a light sandblast or hand wire brushing if in isolated areas. All surfaces must be cleaned of any dirt, dust, or foreign substances that may inhibit bond. For best results, the concrete block wall should receive a ground coat of Powerfix Base. This will level imperfections to give a more monolithic look to the Powerlastic.

Surface preparation for renovation of existing structures:

All existing concrete, stucco, and concrete block surfaces must be cleaned of all dirt, dust, laitance, and any other foreign substance that may inhibit bond of subsequent coatings. Surfaces should receive a light sandblast to remove normal atmospheric carbonization and return to a sound substrate. The removal of specific coating or materials that have been previously applied should be dealt with on a case-by-case basis. Consult Powercrete Technical Services for specific recommendations. Surfaces with paint residue tightly adhered should receive the application of Powerprep P. Any necessary patching on cementitious stucco or concrete block should be done with a mortar of Powerfix Base. Concrete surface patching should be done with Powermix Gel Patch.

Surface preparation for crack repair:

For surface cracks 1/8-in. or less, completely clean the crack and apply Powerprep H to the inside and surrounding area. Apply Powerfix ECF in the crack and strike off level with the surrounding surface. Apply a ground coat of Powerfix EGC to the entire surface area. For surface cracks over 1/8-in. up to 1/4-in., completely clean the crack and surrounding area. Apply Powerprep H to the inside of the crack and surrounding area. Fill the crack with Powerfix ECF extending to a feather edge in a 4-in. radius surrounding the crack. Apply a ground coat of Powerfix EGC to the surface and embed in this a layer of Powerfix Mesh.

Mixing procedure: Before use, mix Powerlastic thoroughly with a slow-speed drill (set at 400 to 600 rpm) with a clean, rust-free, mixing paddle.

Application:

Irregular surfaces shall be leveled as per the following recommendations prior to receiving the final coating of Powerlastic: stucco with no surface cracking - Powerfix Base, Powerfix Base Concentrate, or Powermix Leveler; concrete block with no surface cracking - Powerfix Base, Powerfix Base Concentrate; stucco, concrete, and concrete block with surface cracking - Powerfix EGC. Application method used for Powerlastic is dependent upon the texture used:

Smooth:	Apply by roller, sprayer, or brush.
Fine:	Apply by roller, sprayer, or brush.
Sand:	Apply by trowel or sprayer.
Coarse:	Apply by trowel or sprayer.
Freedom:	Apply by trowel or sprayer.

Powerlastic smooth and fine require the application of two coats. The first coat is prepared by diluting the Powerlastic with clean water at a rate of 1 gal of water per 5 gal of Powerlastic. The coverage rate for Powerlastic is dependent upon the texture that is used and the porosity and profile of the substrate:

Texture	Coverage, ft^2/5-gal pail
Smooth:	175 to 250
Fine:	150 to 250
Sand	125 to 200
Coarse:	100 to 150
Freeform:	60 to 250

7. CORPS OF ENGINEERS' EVALUATION

Percent solids (ASTM D 1644, Method A): 59.8%

Water permeability of coating

Two tests were used to determine the water permeability of the coating. Test specimens were prepared by coating hollow concrete masonry units (CMU) having a density of 85.03 lb/ft^3 and a water absorption of 16.7% when tested according to ASTM C 140.

Inverted funnel method (WES)

One side of a CMU is coated with the material. After the coating has cured for at least 7 days in laboratory air, a funnel having a 5-in. (0.0127-m^2) diameter opening is placed on the coated side, and the edges of the funnel are sealed with a heavy bead of silicone caulk. Once the silicone caulk has hardened, the funnel is filled with water, and the amount of water passing through the coating is measured.

Application of coating: 50 ft^2/gal
Water permeability: 0.17 L/m^2/24 hr

Water-driven rain (ASTM E 514 Modified)

The test specimen was constructed by building a small wall from six of the CMUs having an area of approximately 5.3 ft^2. One face of the wall was then coated with the material under test. The test chamber used measured 20 by 28 in. The rate of application of water and the pressure applied were those specified in ASTM E 514.

Results of test: no visible water was observed on the backside or within the CMU after 24 hr of testing.

Accelerated weathering (ASTM G 53)

Test specimens were prepared by coating mortar prisms with the material. The specimens were tested for 2,000 hr using a time cycle of 8 hr of ultraviolet light and 3 hr of condensation.

No blistering, peeling, checking, or color change was observed after testing.

Water-vapor transmission (ASTM D 1653)

Coating thickness: 0.017 in.
Test method: Method A (wet cup)
Test condition : 73 °F and 50% relative humidity
Test results: 16.9 perms

Tensile strength and elongation (ASTM D 412)

Tensile strength: 245 psi
Tensile elongation: 480%

8. ENVIRONMENTAL CONSIDERATIONS

Reasonable caution should guide the preparation, repair, and cleanup phases of sealant activities involving potentially hazardous and toxic chemicals substances. Manufacturers' recommendations to protect occupational health and environmental quality should be carefully followed. Material safety data sheets should be obtained from the manufacturers of such materials. In cases where the effects of a chemical substance on occupational health or environmental quality are unknown, chemical substances should be treated as potentially hazardous toxic materials.

9. AVAILABILITY AND COST

Information concerning the availability and cost of Powerlastic can be obtained by writing the manufacturer at the address given in item 2 or calling 1-800-542-3057.

10. TECHNICAL SERVICES

Information on technical services can be obtained by writing the manufacturer at the address in item 2 or by calling 1-800-542-3057.