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POLYMER NATION CHEMICAL COMPANY, LLC

Setting the Standard

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TECHNICAL DATA SHEET: P-99 MVS EPOXY PRIMER

Product Overview

P-99 is a state of the art, moisture vapor suppression (MVS) epoxy primer system. It employs a modified epoxy backbone to achieve deep penetration and alkali resistance. This deep penetrating, tenacious bonding material, when properly installed, reduces moisture vapor emission rates, through concrete, to 0.1 perms or less. This allows for subsequent coating of troubled concrete with non-permeable floor finishes.

Uses and Benefits

P-99 is used when concrete testing, per ASTM F2170, shows average RH readings between 75% and 99% or when moisture vapor emissions are suspected, and an additional level of moisture protection is desired. P-99 is installed directly to properly prepared concrete.

P-99, clear or pigmented, and when applied at 100 sq. ft./gal., per ASTM E96, over concrete prepared per ICRI CSP 2 with surface energy higher than 45 dyne/cm to effectively mitigate moisture vapor transmission to less than 0.1 perms. Polymer Nation can provide independent third-party testing results upon request.

*If unable to verify surface energy we recommend shot blasting the concrete per ICRI CSP 3 to help ensure proper wetting out of the concrete.

Limitations

P-99 is designed to be applied between 16 mils for single coat or two 10 mil applications. Ideal application temperatures to be between 60-85°F. Cooler temperatures will increase cure times. Warmer temperatures will decrease working and cure times. Verify that substrate temperature is above 5 degrees of dewpoint during application and cure of material to avoid a potential amine blush.

Surface Preparation

The preparation method for each project is determined by a full understanding of the substrate to be coated, the chemistry of the coating system being used, the coating system thickness, and numerous other factors. The coating installer should fully read and understand ICRI Guideline NO. 310.2R-2013 and OSHA 29 CFR 1926.1153 before starting preparatory work. **For best results, it is recommended to achieve a ICRI CSP-3 profile through shotblasting.** The aim, of preparing a substrate for coating applications, is to roughen the surface, remove weak layers, contaminants, dirt, debris and present a solid, clean, dry substrate for the primer. If unsure as to the level of preparation needed contact Polymer Nation at techservice@polymernation.com

Mixing

Do not split kits. Mix ratio is 2 parts P-99 Part A to 1 part P-99 Part B. Combine all of part A and B into a single container, large enough to except the entire kit. Mix using a 350 RPM mixer using an appropriate mixing blade for 1.5 – 2.5 minutes making sure to not introduce excessive air into the material.

Application

Pour the entire content from the container onto the floor and follow normal squeegee and back roll or cut and roller techniques. Successful material performance requires a monolithic, pinhole-free finish. Achieving this finish is

dependent on the substrate condition and the installer's skill level. While independent testing shows one 16 mil application performs at a perm rate of 0.062 perms, if the concrete is porous, and when performance is most critical, it is recommended to apply in two 8-10 mil applications and to test for holidays using a high voltage holiday detector. Recoat within 24 hours. Clean tools with a solvent similar to Xylene or Acetone.

Technical Data

The data below was gathered at temperatures of 72-75°F and 30-50% RH

Packaging	3 Gallon kits
Mix Ratio by Volume	2 gal A, 1 gal B
Mixed Viscosity	700-1000 cP 25°C/77°F
Working Time	15-20 minutes
Dry to Touch	4-6 hours
Through Dry	6-10 hours
Dry to Light Use	16 - 24 hours
Full Cure	7 days
Shore D Hardness	D65 @ 24 hours
Shore D Hardness	D78 @ 7 days
Gloss @ 60 Degree Angle	80-90
VOC's of Mixed Material	<50 g/l EPA Method 24
Color Scale	0.5-1.0 per ASTM D1500
Solids by Volume Mixed	100%
Application in Mils	16 mils or two 10 mil coats (80-100 sq. ft./gal)
Available Colors	Clear or color packs

PHYSICAL PROPERTIES – P-99 MVS EPOXY PRIMER

Description	Standard	Results
Tensile Strength	ASTM C307	7,870 psi
Moisture Absorption	ASTM C413	<0.2% weight increase
Coefficient of Thermal Lineal Expansion	ASTM C531	15-17 x 10 ⁻⁶ 27-30 x 10 ⁻⁶
Compressive Strength	ASTM C579	13,000 psi
Modulus of Elasticity	ASTM C580	N/A
Flexural Strength	ASTM C580	5,550 psi
Water Vapor Transmission	ASTM E96	< 0.1 perms
Impact Resistance	ASTM D2794	>160 inch pounds
Perm Rating - Independent Certificate from third party testing	ASTM F3010	Yes 0.062 perms
Adhesion	ASTM D3359	5A
Abrasion Resistance CS17 1000 g 1000 cycles in g Loss	ASTM D4060	0.049g Loss (when higher abrasion resistance is required the addition of PC 1336 to the coating should be included)
Adhesion to Steel	ASTM D4541	>1,000 psi
Hiding Power	ASTM D5150	2-5/200
Flammability When Adhered to Concrete	ASTM D635	Self-Extinguishing
Adhesion to Concrete	ASTM D7234	>450 Substrate failure
Coefficient of Friction Dry Ave. three tests	NFSI B101.0	0.75
Coefficient of Friction Wet Ave. three tests	NFSI B101.1	0.7

Accelerated Weathering Testing	ASTM G154	N/A
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Test data has been gathered from testing conducted by independent, internal and third party testing. The best way to compare coating performance is by head-to-head independent testing as this removes the numerous variables found between testing standards, equipment and testing agencies.

* Dispose of material, containers, solvents, etc., per Federal, State and local guideline, rules and laws.

* Store material between 60-85 degrees F in a protected dry location.

***Due to numerous variables outside the control of Polymer Nation and the installer, Polymer Nation only guarantees that P-99 meets the testing standards set by E96 and F3010, as verified by an independent third-party laboratory for a class one MVB (.1 perms or less).** For additional questions or options for material and labor warranties, please contact techservice@polymernation.com

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