# **PolyGreen Solutions**



"Polymer Solutions for Sustainability"

## Technical Data Sheet Polyurea Hybrid 107

## **PRODUCT DESCRIPTION**

PH-107 is a 100% solids elastomeric two-component spray applied aromatic hybrid polyurea, used as a protective or waterproofing coating with good low temperature resistance designed for commercial, industrial and manufacturing atmospheres. PH-107 is used in vertical and horizontal applications on concrete, wood and metal surfaces. Its quick gel and set time is convenient for applications in temperatures down to 0° Fahrenheit, (-17.8° Celsius). It is sprayed in one or more passes and is insensitive to moisture.

## **ADVANTAGES**

- Very low temperature resistance
- Excellent water resistance
- Complies with SCAQMD Requirements 100% Solids
- Complies with the Polyurea Development Associations
- (PDA) definition of a hybrid polyurea coating.
  Installation with or without reinforcement
- Low Temperature Flexibility
- Can be applied on Geotextile Fabric
- Consult PolyGreen for proper primer selection.
- Odorless
- Thermal Stability Very Good

## **RECOMMENDED USES**

- Beverage/Food Processing Plants
- Cold Storage Facilities
- Amusement Parks/Entertainment
- Environmental
- Planters/ Tunnels/ Underground Vaults
- Industrial/Manufacturing Facilities
- Marine
- Institutional/Medical/Pharmaceutical
- Military
- Mining/Timber
- Parking Structures
- Transportation
- Utilities
- Wildlife Enclosures

#### **SURFACE PREPARATION**

Surface preparation is the essential first stage treatment of a substrate before the application of any coating. The performance of a coating is significantly influenced by its ability to adhere properly to the substrate material. It is generally well established that correct surface preparation is the most important factor affecting the total success of surface treatment. The presence of even small amounts of surface contaminants, oil, grease, oxides etc. can physically impair and reduce coating adhesion to the substrate.

Be sure that surfaces are clean, dry, and sound and give sufficient profile to obtain adequate product adhesion. Remove all dust, efflorescence, laitance, salts, curing compounds, dirt, oil, form release agents, and other foreign matter. Perform an adhesion test prior to starting any coating project.

Concrete should be cured for a minimum of 28 days prior to product application and have at least 3000psi compressive strength. *PolyGreen Solutions, LLC.* 500 Sugar Mill Road; Suite 260A Atlanta, GA 30350

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## SURFACE PREPARATION REFERENCES

ASTM D4258-Standard practice for cleaning concrete ASTM D4259-Standard practice for abrading concrete ASTM D4260-Standard practice for etching concrete ASTM F1869-Standard test method for measuring moisture vapor emission rate of concrete ICRI 03732: CSP 3-5-Concrete surface preparation SSPC-SP 5/NACE No.1, White Metal Blast Cleaning SSPC-SP 6/NACE No. 3. Commercial Blast Cleaning SSPC-SP 7/NACE No. 4, Brush-Off Blast Cleaning SSPC-SP 8, Pickling SSPC-SP 10/NACE No.2, Near-White Blast Cleaning SSPC-SP 11, Power Tool Cleaning to Bare Metal SSPC-SP 12/NACE No. 5, Surface Preparation and Cleaning of Metals by Water Jetting prior to Recoating SSPC-SP 13/NACE No. 6, Surface Preparation of Concrete SSPC-SP 14/NACE No. 8, Industrial Blast Cleaning

## **CONCRETE REPAIR**

If the concrete surface is unsuitable for coating, use a suitable primer or suitable primer with sand as a repair agent. Once the repair has cured, prime the entire surface intended for coating. Consult PolyGreen or your Sales Agent for selecting the best primer for your substrate.

#### COLOR

Black and Neutral – Non Standard colors and color packs are available upon request. Add color to Part-B only.

Aromatic polyureas are known to yellow or darken in color when exposed to UV and/or sunlight. If a top coat is required it must be applied within six (6) hours of application with an aliphatic polyurea, polyurethane, or other suitable coating.

#### **COVERAGE RATE**

1 gallon (3.79 liters) of PH-107 will cover approximately 1600 square feet 1 mil (0.025mm) thick, and can be applied in one or more passes to achieve a desired thickness.

## PACKAGING

**52 gallons** Part-A (Isocyanate) and **52 gallons** Part-B (Resin) packaged in 55 gallon drums.

#### **MIXING PROCEDURES**

Do not Dilute PH-107 under any circumstances.

Adequately blend PH-107 Part-B (Resin) with air driven power tools until the mixture and color is consistent.

## STORAGE

PH-107 has a shelf life of 1 year shelf life from the date of manufacture, in factory-sealed containers.

Storage temperature for Part-A and Part-B is between  $59^{\circ}F - 77^{\circ}F$  ( $15^{\circ}C - 25^{\circ}C$ ), avoid freezing temperatures.

Keep containers sealed tightly to eliminate any condensation, moisture, or water contamination in Part-A or Part-B.

## **APPLICATION**

Primer is recommended on all substrates. Except on properly prepared steel (immersion service requires a primer).

Prior to application: Precondition both Part-A and Part-B to  $75^{\circ}F - 80^{\circ}F$  (24°C - 27°C) before applying.

Surface temperature should be greater than 32°F (0°C). Insure that the outside temperature is at least 6°F (6°C) above the dew point.

Fit Part-A with a desiccant drying device.

Apply PH-107 using a plural component, high pressure 1:1 ratio heated, spray equipment.

**Proportioner Conditions:** 

- Capacity minimum 20 lbs. per minute
- Static pressure 2800 3000psi
- Spraying pressure 2500psi minimum
- Pressure balance 100 variance desirable
- 300 psi variance maximum
- Temperatures preheaters & hose 170°F (77°C) each

PH-107 should be sprayed in a smooth pattern, to establish uniform thickness and appearance.

Perform a substrate adhesion test (if required) seven days after application of PH-107.

## **EQUIPMENT CLEAN UP**

Immediately clean equipment with an environmentally safe solvent, as permitted by local regulations. Cured or dried material may be removed by mechanical means.

## SPECIFICATION AND FIELD ASSISTANCE

Contact PolyGreen Solutions for specification assistance.

Jobsite visits by PolyGreen Solutions employees or its independent agents are for the purpose of making recommendations only and cannot provide analysis of architectural specifications, management or quality control on the project.

#### LIMITATIONS

The end user should check the suitability of this product prior to its application.

Excess moisture vapor in concrete slabs may result in primer and/or coating to delaminate, discolor or cause improper curing.

Recoat PH-107 within 0 – 6 hours of previous coat.

Do not open until ready to use.

PolyGreen Solutions assumes no liability for substrate defects.

Substrates that have previously been coated are subject to absorption, which may affect the adhesion of a new coating. Surface temperature should be greater than 50°F (10°C) and at least 5°F (-15°C) above the dew point. High temperatures and humidity can significantly affect pot life and the cure time. Low temperatures and humidity can extend the cure time. Not UV Stable will discolor.

## **TECHNICAL DATA**

MIX RATIO BY VOLUME	1A:1B
POT LIFE @ 150°F (66°C)	10 SECONDS
TACK FREE TIME (DEPENDS ON THICKNESS & SUBSTRATE	
TEMPERATURE)	7-10 SECONDS
RECOAT TIME	0 - 6 HOURS
DENSITY (SIDE A & B COMBINED)	8.5 LBS/GAL
VISCOSITY AT 75°F (24°C), BROOKFIELD:	
PART-A	700-1200 CPS
PART-B	300-800 CPS
SHORE HARDNESS, ASTM D-2240	55 SHORE D
TENSILE, ASTM D-412	2450 PSI
ELONGATION, ASTM D-412	450%
TEAR, ASTM D-412	300 PLI
TOUGHNESS, ASTM D-412	3411 PSI
VOC CONTENT	0 G/L
RETURN TO SERVICE: FOOT TRAFFIC	4 HOURS
RETURN TO SERVICE: FULL SERVICE	6-24 HOURS
TABER ABRASION RESISTANCE, ASTM D-4060 (CS18 WHE	EL, 1000
CYCLES, 1 KG LOAD) (MAXIMUM)22 MG	/ 1K CYCLES
WATER ABSORPTION, ASTM D-453	
(MAXIMUM 23°C, 24 HOURS)	NA
IMPACT RESISTANCE @ 25°C (ASTM D-2794	>350 PLI
PULL-OFF STRENGTH (MINIMUM), ASTM D-4541INTER-COA	AT ADHESION
(WITHIN RECOAT TIME)	
	EXCELLENT
LINEAL SHRINKAGE	NA
FLEXIBILITY (1/8" 3 MM MANDREL BEND TEST) ASTM D-52	2 NA
TOTAL SOLIDS BY WEIGHT, ASTM D-2369	. 100%
TOTAL SOLIDS BY VOLUME, ASTM D-2369	100%
BOND STRENGTH, ASTM D4541 (PRIMED SUBSTRATE)	
CONCRETE	>300 PSI
SIEEL	>1000 PSI
WOOD	>250 PSI
VOLATILE ORGANIC COMPOUNDS ASTM D-2369	NA

NOTE: PHYSICAL PROPERTIES MAY VARY ON THE TYPE OF SPRAY EQUIPMENT USED. THE END USER SHOULD CHECK THE SUITABILITY OF THIS PRODUCT PRIOR TO ITS USE.

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