

Technical Data Sheet



Willamette Valley Company

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Partnering through service,
innovation, and integrity

POLYQuik® HPU-1147

Fast Set Hydrophobic Coating

DESCRIPTION

POLYQuik® HPU-1147 is a two-component, aromatic, sprayable, hybrid polyurea elastomeric coating. It is used as an elastic waterproof protective coating for industrial applications. It is specially formulated to provide a slick, hydrophobic surface on substrates which need to be kept clear or which are cleaned frequently. POLYQuik® HPU-1147 protects against impact, abrasion and water intrusion.

WHERE TO USE

- **Non-Stick Coating**—for keeping surfaces clean
- **Waterproofing**—parts or assemblies
- **Abrasion Resistant Coating**—for industrial parts
- **Protective Coating**—for metal and coated substrates

FEATURES AND BENEFITS

- **Low Surface Energy**—easy to clean
- **Hydrophobic Surface**—sheds water rapidly
- **Two-Component Cure**—sets within seconds
- **Impact and Abrasion Resistance**—protects substrate

PACKAGING

5-gal. pails (18.9 L)
50-gal. drums (189 L)

COLORS

Black

YIELD

5-gallon pail set (10 gal total) = 1.34 ft³
50-gallon drum set (100 gal total) = 13.36 ft³

Sprayed Yield*: 26 ft² per gal or 3.8 gal per 100 ft²
at 60 mil DFT (0.63 m² per L at 1.5 mm DFT)

*assumes 100% transfer

SHELF LIFE

1 year when properly stored.

STORAGE

Store and ship this product in a clean, dry, low-humidity, shaded or covered environment at 60 to 90° F (15 to 32° C).

TECHNICAL INFORMATION

Typical Properties

VOC , lbs/gal (g/L), ASTM D 2369	0
Viscosity , cps, ASTM D 4878, Resin / Iso	1000 /700
Service temperature , ° F (° C)	-26 to 190 (-32 to 88)
Gel time , sec	4
Tack-free time , sec	20
Recoat time , hours	24
Tensile ,* psi (MPa), ASTM D 412	2700 (18.6)
Elongation ,* %, ASTM D 412	170
Hardness ,* Shore D, ASTM D2240	60D
Tear ,* pli (kN/m), ASTM D 1938	144 (25)
Tear, (Die C)* pli (kN/m), ASTM D 624	450 (78)
Abrasion resistance* mg lost, H-18 wheel, 1kg, 1k cycles, ASTM D 4060	19
Water contact angle ,* degrees FTA135 goniometer, sessile drop method, 10uL drop	100

*Properties achieved using specific dispensing equipment – Contact WVCO for more information.

Processing Parameters

Ratio by volume	1 to 1
Application temp , ° F (° C)	40 to 110 (4.4 to 43)
Recommended thick. , mils (mm)	20 to 125 (0.5 to 3.0)
Meter equipment	Heated Plural Component (30 Mesh Y-Strainer)
Gun requirement	Impingement spray gun (40 Mesh Screens)
Spray pressure , psi (MPa)	2,000 to 3,000 (13.6 to 20.4)
Spray temperature , primary heaters and hose, °F (° C)	140 to 180 (60 to 82)

APPLICATION

SURFACE PREPARATION

CONCRETE

1. Priming is required; prime with POLYQuik Epoxy Primer, PolyPrime, or other suitable primer. Contact a WVCO representative for primer options and technical recommendations. Refer to primer technical data sheet for application and cure time information.
2. The surface being coated must be fully cured (28 days minimum), structurally sound (200 psi or greater tensile strength according to ASTM D 7234), clean (ASTM D 4258), and dry (less than 5% surface moisture, ASTM E1907 and D4263).
3. The surface must have low moisture vapor transmission (less than 3 lb/24 hr/1000 ft², RMA Test Method).
4. Do not apply over concrete if vapor barrier is not present or unknown.
5. Profile surface according to ICRI Guide 03732 to a minimum of CSP 3 by abrasive blasting or hydroblasting. Remove contaminants before blasting.
6. Fill all voids and cracks between 0.06-0.50" (1.5-12.5 mm) with POLYQuik[®] HPU Filler or other suitable filler. Contact WVCO representative for filler options and technical recommendations.

STEEL & OTHER METALS

1. Steel and other metal surfaces must be cleaned before blasting according to SSPC-SP1. Remove any sharp edges, weld splatters and other surface imperfections.
2. Blast according to SSPC-SP10 / NACE No. 2 Near White standard (0.003" (0.08 mm) profile).
3. Test the surface for non-visible soluble salt contamination according to NACE 6G186. If necessary treat the surface with CHLOR[®]RID or equivalent chloride remover until less than 3 mg/cm² is detected.
4. PRIMING STEEL OR OTHER METALS – Apply POLYQuik[®] Epoxy Primer or PolyPrime only if metal surface temperature is 5° F (3°C) above the dew point to avoid application over damp surface. Refer to primer technical data sheet for application and cure time information. Do not use other primers without contacting your WVCO representative for approval.
5. For aluminum and galvanized metals, and pre-coated steel, contact your WVCO representative for additional information.

PROCESSING

PLURAL COMPONENT METER

1. Precondition material to at least 70°F (21°C) for 24 hours. Secure an air driven mixer with 3 folding blades in the center bung hole of the drum. Air driven mixer blade configuration: 8" blade - bottom, 6" blade - middle, and 6" blade - top. Ensure the mixer is spinning clockwise at a speed adequate enough to thoroughly mix the resin. Mix for 30 minutes before spraying. Repeat above mixing instructions after every 4 hours of operation. Avoid

mixing for more than 30 minutes as air may become entrapped in the resin. Mixers are available through WVCO Precision Technologies.

2. HPU-1147 must be sprayed with a high pressure plural-component proportioner. Contact a WVCO representative for plural component proportioner recommendations and configurations. Proportioner should be able to heat resin and iso to 150-180°F (65-82°C).
3. Proportioner must generate a minimum spray pressure of 2,000 psi (13.8 MPa), maintain a stable pressure during spray and keep minimal pressure differential between resin and iso – no more than 300 psi – during application.
4. Contact a WVCO representative for high and low output application equipment. Equivalent applicator setups from other manufacturers are available. CAUTION: APPLICATOR OUTPUT MUST NOT EXCEED 75% OF METER OUTPUT.

APPLICATION

1. When priming, prime according to Surface Preparation guidelines. Refer to primer technical data sheet for application and cure time information.
2. Avoid blisters and poor adhesion by not applying coating when the humidity is above 85%. Apply the coating when the substrate temperature is stable or dropping. Minimize out-gassing and pinholes on concrete with primers, and with multiple thin applications of coating (10 mils or less per pass).
3. Clean surface of contaminants (i.e. dust, dirt). Surface may be blown with dry compressed air or use a tack cloth.
4. Spray HPU-1147 in a consistent sweeping pattern, 15-20 mils per pass as a general guideline and maintaining a consistent distance from the substrate. ALWAYS START AND STOP SPRAYING OFF TARGET TO AVOID BLISTERING.
5. Recoat without surface preparation is possible within 24 hours of application at 70°F cure. After 24 hours abrade the surface and clean with acetone or POLYQuik[®] Cleaner, and recoat within 1 hour.
6. Proper application is the responsibility of the user. Field visits by a WVCO representative are for the purpose of making technical recommendations only, and are not for supervising or providing quality control on the jobsite.

CLEANING & MAINTENANCE

- Use POLYQuik[®] Cleaner to clean parts after every use. Do not immerse the equipment in Cleaner.
- CLEAN Y-STRAINERS REGULARLY.
- Contact WVCO representative for pump flushing and long term storage stability recommendations.

HEALTH AND SAFETY

Before handling, you should become familiar with the Material Safety Data Sheet (MSDS) regarding the risks and safe use of this product. To obtain an MSDS please call 800-333-9826 or send an email to: msds@wilvaco.com.

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Revision Date: August 2014

