Technical

Data Sheet

WVCO

Willamette Valley Company

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Partnering through service, innovation, and integrity

POLYQuik® HPU-1653

Slip-resistant Fast-setting Polyurea Coating

DESCRIPTION

POLYQuik® HPU-1653 is a two-component, aromatic, elastomeric coating with exceptional abrasion and slip resistant properties. It cures quickly and it has excellent adhesion to wood, concrete, geotextile, and steel. POLYQuik® HPU-1653 can be applied under a wide range of climate conditions to form a very durable coating for ramps and various waterproofing applications.

WHERE TO USE

- **Walkway Surfaces**–ramps, decks
- **Waterproofing**–ponds, tanks
- **Protective Coatings**–wood, concrete, steel
- **Geotextiles**–geomembrane applications

FEATURES AND BENEFITS

- **Slip-resistant**–improves tire traction on ramps
- **Durable**–highly abrasion and tear resistant
- **Flexible**–excellent crack-bridging
- **Two-component cure**–fast turn-around time

PACKAGING

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

COLOR

Black, Gray

*More colors and packaging options may be available. Contact your WVCO representative and refer to the color palate for more information.

YIELD

5-gallon bucket set (10 gal total) = 1.34 ft^3
50-gallon drum set (100 gal total) = 13.36 ft^3

Sprayed Yield*: 26 ft^2 per gal or 3.8 gal per 100 ft^2 at 60 mil DFT(0.63 m^2 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	1640 / 1500
Service temperature, ° F (° C)	-26 to 190 (-32 to 88)
Gel time, sec	6
Tack-free time, sec	15
Tensile,* psi (MPa), ASTM D 412	1740
Elongation,* %, ASTM D 412	240
Hardness, Shore A, ASTM D 2240	83
Tear,* pli (kN/m), ASTM D 1938	95
Tear, (Die C)* pli (kN/m), ASTM D 624	350
Abrasion resistance, mg lost; H18 wheel, 1 kg, 1 k cycles, ASTM D 4060	131

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

Typical Properties, Static Coefficient of Friction, ASTM D 4918

Coating Surface	Rubber	Leather	Steel
Smooth	1.0	0.85	0.63
Textured	0.71	0.74	0.38
Abraded	0.75	0.73	0.59
Aggregate filled	0.83	0.73	0.50

Processing Parameters

Ratio by volume	1 to 1
Application temp, ° F (° C)	20 to 110 (-7 to 43)
Recommended thick., mils (mm)	20 to 125 (0.5 to 3.0)
Meter equipment	Heated Plural Component (30 Mesh Y-Strainer Screens)
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)	130 to 150 (55 to 65)

APPLICATION

SURFACE PREPARATION

WOOD

1. Store wood in a covered, dry location, and protect surface from damage and contamination.
2. For a completely uniform appearance in the finished product, fill all voids, spaces, or damaged areas prior to coating. Repair or fill areas with POLYQuik® HPU-FILLER or other suitable filler. Contact WVCO representative for filler options and technical recommendations. Remove any excess filler by sanding until level with surrounding area.
3. Priming may be required: prime with POLYQuik Epoxy Primer, PolyPrime, or other suitable primer. Contact WVCO representative for primer options and technical recommendations. Refer to primer technical data sheet for application and cure time information.
4. Ensure wood surface is smooth and dry prior to applying POLYQuik® HPU-1653. Surface must have at least a 36-120-grit surface and less than 10% surface moisture. Humidity levels greater than 85% and surface moisture greater than 10% will create blisters between the coating and wood surface.
5. Apply POLYQuik® HPU-1653 in two 15-20 mils (0.3-0.5 mm) coats in crosshatch pattern and allow to cure for 2-3 minutes. Repeat this application until desired thickness is achieved.

CONCRETE

1. Priming is required; prime with POLYQuik Epoxy Primer, PolyPrime, or other suitable primer. Contact 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 ft^2, 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 3mg/cm^2 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. Other primers may also be used. Do not use without contacting your WVCO Representative for approval.
5. For aluminum and galvanized metals, contact your WVCO Representative for additional information.

PROCESSING

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 a 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-1653 must be sprayed with a high pressure plural-component proportioner. Contact 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 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) on wood.
3. Clean surface of contaminants (i.e. dust, dirt). Surface may be blown with dry compressed air or tack cloth.
4. Spray HPU-1653 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. Apply a texture coat over the surface to create a uniform appearance.
6. Recoat without surface preparation is possible within 12 hours of application at 70°F (21°C). After 12 hours, mechanically abrade the surface and clean with acetone or POLYQuik® Cleaner within 1 hour of recoat. Topcoat within one hour of cleaning.
7. For color stability, aliphatic topcoats may be used. Contact WVCO representative for options and technical recommendations.

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.

NOTE

Proper application is the responsibility of the user. Field visits by WVCO Representative are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

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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