

Technical Data Sheet



Willamette Valley
Company

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Partnering through
service, innovation, and
integrity

POLYQuik® P-480

Fast-setting Polyurea Coating

DESCRIPTION

POLYQuik® P-480 is a two-component, aromatic, sprayable, polyurea, elastomeric coating. It is used as a chemical-resistant, waterproof, protective coating for both vertical and horizontal surfaces. It is resistant to corrosion and many chemicals, including hydrogen sulfide, acids and hydrocarbon solvents. Use POLYQuik® P-480 where regular thermal or dynamic movement is expected.

WHERE TO USE

- **Primary and Secondary Containment**
- **Waterproofing**—above or below grade
- **Wastewater**—meets requirements of LA County
- **Protective Coatings**—for concrete, wood, metal, steel

FEATURES AND BENEFITS

- **Superior properties**—excellent crack-bridging
- **Two-component cure**—sets in seconds
- **Serviceable within 1 hour**—reduces facility downtime
- **Excellent chemical resistance**

SPECIFICATION COMPLIANCE AND APPROVALS

- **Los Angeles County Sanitation** (Grade 3 Redner test)
- **Washington Dept. of Ecology Toxicity Test** (Pass)
- **Dept. of Environmental Protection** (Florida Approved)

PACKAGING COLOR

5-gal. pails (18.9L) Black, Gray, Tan
50-gal. drum (189 L)

*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) = 0.67 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	500 / 400
Service temperature , ° F (° C)	-26 to 180 (-32 to 82)
Gel time , sec	6
Tack-free time , sec	30
Tensile* , psi (MPa), ASTM D 412	2,500 (17)
Elongation* , %, ASTM D 412	480
Hardness , Shore D, ASTM D 2240	45
Tear* , pli (kN/m), ASTM D 1938	270 (47)
Tear Die C* , pli (kN/m), ASTM D 624	410 (72)
Abrasion resistance mg lost, H-18 wheel, 1kg, 1k cycles, ASTM D 4060	298
Concrete adhesion , psi (MPa), ASTM D 4541	350 (2.4)
Crack bridging , 1/8" at 60 mils, ASTM C 836	Pass
Hydrostatic pressure , ASTM D 5385, 0.060 in.(1.5mm); feet (meter) of water	231 (70)
Moisture vapor transmission g/24hr/m ² (Perms), ASTM E96, Desic. Method 90 mils or 2.2mm	3.3 (0.48)
Puncture resistance* , lbs (kg), ASTM D 4833	130 (59)
UV resistance , ASTM C1442 Xenon Arc	Discolors with no physical changes

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

Geomembrane Properties (GEOTEX® 1201 nonwoven)

Grab tensile strength , lbs (MPa), ASTM d751	653 (4.4)
Grab elongation , %, ASTM D751	64
Immersion test for liners , Transformer oil, EPA 9090A	Pass
Moisture vapor transmission , cm/s (Perms), ASTM E 96 water method at 94 mils	1.1x10 ⁻⁸ (1.6)
Puncture resistance , lbs (kg), ASTM D 4833	233 (105)
Soil burial test , retention of 95% of properties, ASTM D 3083	Pass
Trapezoid tear , lbs (kg), ASTM D 4533	207 (94)

Processing Parameters

Ratio by volume	1 : 1
Application temp , ° F (° C)	20 to 120 (-7 to 50)
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 (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)	150 to 180 (65 to 82)

APPLICATION

SURFACE PREPARATION

CONCRETE

1. Priming is recommended; prime with POLYQuik® PolyPrime or other suitable primer. Contact WVCO representative for primer options, technical recommendations and before using on surfaces intended for immersion service. 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 ICR1 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 suitable concrete filler. Contact your 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. STEEL - Properly prepared steel does not require primer for some applications. Contact your WVCO representative before electing this option, as priming may be recommended for your application. Apply P-480 only if steel surface temperature is 5°F (3°C) above the dew point to avoid application over damp surface. Steel should be coated within the same day and before flash rusting reoccurs.
5. 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. Contact your WVCO representative for approval before using other primers or using on surfaces intended for immersion service.
6. For aluminum and galvanized metals, contact your WVCO representative for additional information.

GEOTEXTILE SURFACES

1. P-480 is applied to the heat treated side of non-woven polypropylene geotextiles. Choose the geotextile weight based on application. Contact your WVCO Representative before using other types of geotextiles. Protect geotextile surfaces from damage before applying coating. Minimize wrinkles when laying out geotextile. Only walk on geotextile while applying coating to prevent scuffing or frayed surfaces.
2. Apply coating over entire geotextile before adhering it to perimeter surfaces. Use the coating to bond geotextile to perimeter surface after the entire area has cured for 60 minutes, or else bury the coated geotextile in a trench surrounding the application area.

3. Recommended geotextiles include: GEOTEX 1201 and GEOTEX 2x2H (spray P-480 on the black side).

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. P-480 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. If 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 P-480 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 an optional 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. Recoat with P-480 within one hour of cleaning.
7. For color stability, aliphatic topcoats may be used. Contact WVCO representative for topcoat options and technical recommendations.

CLEANING & MAINTENANCE

- Use POLYQuik® Cleaner to clean applicators and parts after every use. Do not immerse the entire applicator 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.

DISCLAIMER OF WARRANTY

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