

Technical Data Sheet



Willamette Valley Company

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Partnering through service,
innovation, and integrity

POLYQuik® HPRG TYPE 2

Type-2 High Performance Rail Grout

DESCRIPTION

POLYQuik® HPRG TYPE 2 is a polyurethane system designed to fill space between transportation rail and concrete. It will minimize rail deflection, absorb vibration without cracking, and electrically isolates the rail. POLYQuik® HPRG TYPE 2 is delivered in a ready-to-use kit for rapid installation of this self-leveling, high performance rail grout.

WHERE TO USE

- **Embedded Rail**—between rail and concrete
- **Special Track**—intersection and stations
- **Over Structures**—parking garages and tunnels
- **Rail Maintenance**—track repair or replacement

FEATURES AND BENEFITS

- **Electrical Isolation**—excellent track-to-earth resistance
- **Sound Dampening**—reduces acoustic noise
- **Vertical Stiffness**—minimizes lateral displacement
- **Low Odor** - can be used indoors
- **Zero VOC** – safer for applicators

PACKAGING

5 gallon Kit
(31.5 lbs. or 69.5 kg.)

COLORS

Black

YIELD

1.5 gal. (7.0 liter)
0.2 cubic feet (0.007 cubic meters)

SHELF LIFE

1 year(s) 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

Abrasion Resistance , mg loss, CS-17 (H-18) wheel, 1kg, 1k cycles, ASTM D 4060	0 (500)
Adhesion to steel , psi (MPa), ASTM D 4541	Cohesive 500 (2.75)
Concrete adhesion , psi (MPa), ASTM D 4541	Cohesive 500 (2.75)
Compressive Set , ASTM C 395 % Change After Third Cycle.	2%
Compressive Modulus , Deflection at 250 psi, ASTM C 575 (in)	0.048
Dielectric Strength , volt/mil, ASTM D 149	> 410
Volume Resistivity , 75° F 50% RH, ohm-cm, ASTM D 257	1.49 x 10 ¹²
Dynamic Deflection , ASTM D 5992	No Failure
Tensile , psi (MPa), ASTM D 412 No Sand	3,200
Elongation , %, ASTM D 412 No Sand	1350
Hardness , Shore A, ASTM D 2240 No Sand	65 ±5
Potlife , minutes, 70° F (21° C)	5
Recoat time , min. / max, hours, 70° F (21° C)	1 / 24
Service temperature , ° F (° C)	-40 to 210 (-40 to 100)
Viscosity , cps, ASTM D 4878, Mixed with Sand	20,000
VOC , lbs/gal (g/L), ASTM D 2369	0

Chemical Resistance, ASTM D 471 75° F for 7 days.

Chemical	% Wt Change	% Vol. Change
Water	2.0	< 0.1
10% NaCl	1.6	< 0.1
10% CaCl ₂	1.6	< 0.1
5% H ₂ SO ₄	1.8	< 0.1
5% NaOH	1.7	< 0.1
ASTM Oil #1	< 1	-0.5
ASTM Oil #3	7.7	4.4

Processing Parameters

Application temp. , ° F (° C)	50 to 90 (10 to 32)
Application method	Mechanical mix & pour or WVCO 4:1 Meter

APPLICATION

SURFACE PREPARATION

CONCRETE

1. The surface being coated must be fully cured 28 days, structurally sound (200 psi or greater according to ASTM D 4541), clean (ASTM D 4258), and dry (less than 5% surface moisture, ASTM E-1907 & ASTM D 4263).
2. The surface must have low moisture-vapor transmission (less than 3 lb/24 hr/1,000 ft², RMA Test Method).
3. Profile surface according to ICRI Guide 03732 to a minimum of CSP 3 by abrasive blasting or hydroblasting. Remove contaminants before blasting.
4. Fill all voids and cracks greater than 0.060" with POLYQuik® HPU FILLER or HPU-CJF.
5. All concrete surfaces must be primed with POLYQuik® 1K PRIMER (MC) or POLYQuik® EPOXY PRIMER.

STEEL & OTHER METALS

1. Steel surfaces must be cleaned before blasting (SSPC-SP1). Remove any sharp edges and other surface imperfections.
2. Dry abrasive blast surface according to SSPC SP-6/NACE No. 3.
3. Remove any non-visible soluble salt contamination (less than 3 mg/cm², NACE 6G186, CHLOR*RID).
4. Apply primer and POLYQuik® HPRG TYPE 2 within the same day and before the prepared steel surface is chemically contaminated and before rusting reoccurs.
5. For aluminum and galvanized metals, contact your WVCO Representative for additional information.

OTHER MATERIALS

1. Previously installed polymer materials must be tested to determine the best method of preparation to achieve acceptable adhesion. Consult manufacturer for recommendation. Typically, methods will include solvent cleaning, abrading, and vacuuming surface.

PROCESSING

1. Precondition the containers to 70°F (21°C) for 24 hours before using. Choose a work area that is shaded and away from direct sunlight.
2. The materials are supplied in ready-to-combine kits. USE THE ENTIRE KIT AND DO NOT DIVIDE.
3. Check that primed surfaces are ready for application of POLYQuik® HPRG Type-II before mixing contents of the KIT.
4. Protect the floor of an area with cardboard for the mixing each KIT and make sure it is a short distance from the application area.
5. Attach to a drill, a clean mixing blade 1/3 the diameter of mixing container.
6. Remove the containers of the KIT and leave the sand in the bucket. Pour the ISO into the sand-filled KIT bucket.

7. Slowly mechanically mix ISO-SAND mixture 1-minute before combining with the RESIN.
8. Pour the RESIN into the ISO-SAND mixture and mix for 30 seconds, scrape sides for 10 seconds, mix for 30-60 seconds. Make sure mixture is well mixed and without streaks.
9. IMMEDIATELY POUR INTO APPLICATION AREA. DO NOT SCRAPE BOTTOM WHILE POURING SO UNMIXED MATERIAL WILL REMAIN IN CONTAINER. DO NOT LEAVE BUCKET UPSIDE DOWN OVER APPLICATION AREA AFTER POURING.
10. POTLIFE IS LESS THAN 5 MINUTES. USE IMMEDIATELY AFTER MIXING.

APPLICATION

1. Protect surfaces around the application area to prevent contamination during installation.
2. Formwork and other supports must be installed such that the POLYQuik® HPRG TYPE 1 can be placed continuously and as quickly as possible.
3. Allow POLYQuik® 1K PRIMER (MC) to cure at least 30 minutes between coats and before application of POLYQuik® HPRG TYPE 2. Apply at least two coats over concrete and DO NOT ALLOW TO PUDDLE.
4. ALL PRIMERS MUST BE TACK-FREE BEFORE APPLYING SECOND COAT OR POLYQuik® HPRG TYPE 2.
5. Two applications of POLYQuik® HPRG TYPE 2 are typically required to completely fill around the rail. First application covers the base of the rail and the second fills the remaining volume up to the surrounding elevation.
6. Starting at a termination point, pour the POLYQuik® HPRG TYPE 2 mixture from one side of the rail until it flows under and above the base on the opposite side.
7. Continue pouring and start moving to keep a rolling edge and prevent entrapping air. Fill the base section of the rail for the entire application area.
8. Within the 8-hours, return to the starting point and install the second application up to the surrounding elevation.
9. After 24 hours, clean POLYQuik® HPRG TYPE 2 with acetone, mechanically abrade the surface and vacuum the surface to remove dust.
10. 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.

CLEANING & MAINTENANCE

- Clean equipment with POLYQuik® Cleaner or acetone immediately after use. Cured material must be removed mechanically.

HEALTH AND SAFETY

Willamette Valley Company recommends reading and becoming familiar with the Material Safety Data Sheet before you using this product.

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