

# Technical Data Sheet



Distributed by:  
Pavement Repair Products Co.  
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# POLYQuik® FASTPATCH HC

## High Compression Strength Urethane

### DESCRIPTION

FastPatch HC is designed to have the highest possible compression strength without becoming overly brittle. HC is designed to be a tough, 100% solids, two-component urethane that sets quickly, allowing fast return to service. It can be used in applications that require a fast setting, high strength material.

### WHERE TO USE

- **Foundations**-concrete structures
- **High Load Areas**-footings, rail applications
- **Anchoring**-securely fasten bolts or rebar
- **Base Plate Grout**-for machinery applications

### FEATURES AND BENEFITS

- **High Compression Strength**-supports heavy loads
- **Easy to Use**-meter applied
- **Fast Curing**-quick return to service
- **Excellent Adhesion**-bonds strongly to itself and concrete
- **Low Viscosity**-flows into place easily
- **Cures at Low Temperatures**-year round use

### PACKAGING

- \*Cartridges
- 5-Gallon Pails
- 50-Gallon Drums
- \*Only available in black

### COLORS

Black, Gray

### YIELD

- 600-mL Cartridge = 36.61in<sup>3</sup>
- 1500 mL Cartridge = 91.5in<sup>3</sup> (special order only)
- 5-Gallon Bucket Sets (10-gal total) = 1.3 ft<sup>3</sup>
- 50-Gallon Drum Sets (100-gal total) = 13.36ft<sup>3</sup>

### SHELF LIFE

1 year when properly stored. Mix Before Using.

### 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

<b>VOC</b> , lbs/gal (g/L), ASTM D 2369	Virtually 0%
<b>Viscosity</b> , cps, ASTM D 4878, mixed	400
<b>Service temperature</b> , ° F (° C)	-30 to 170 (-34 to 77)
<b>Potlife</b> , min., 70° F (21° C)	2
<b>Tack-free time</b> , min., 70° F (21° C)	4
<b>Hardness</b> , Shore D, ASTM D 2240	85
<b>Concrete adhesion</b> , psi (MPa), ASTM D 7234	836 (5.8) 100% substrate
<b>Flexural strength</b> , psi, (MPa) ASTM C 580-02	12,233 (84.35)
<b>Linear coefficient of thermal expansion</b> , 1/°F (1/°C), ASTM C 531-00	5.0 × 10 <sup>-5</sup> (8.9 × 10 <sup>-5</sup> )
<b>Creep</b> (in/in) ASTM C1181	3.46x10 <sup>-2</sup> (neat) 1.03x10 <sup>-2</sup> (gravel extended)
<b>Anchoring strength</b> , lbf (kgf), , ASTM E 488, ½" threaded rod, 6" depth	12,187* (5,528)
<b>Anchoring strength</b> , lbf (kgf), ASTM E 488, #4 rebar, 6" depth	13,259*(6,014)

\*Independently tested using specific parameters, contact manufacturer for more details.  
Predominate failure mode was typically a transverse crack through the block with isolated occurrences of conical blowout or multiple cracks.

### Processing Parameters

<b>Ratio by Volume</b>	1 to 1 (Resin to Iso)
<b>Application temp</b> , ° F (° C)	40 to 100 (4 to 38)
<b>Mixer dimensions</b> ,	13 mm diameter with 32 elements

### Cure Time (Resin conditioned at 70°F)

Temperature, 50% RH	Gel time, min.	Tack-free time, min.
40° F (4° C)	3-5	7-10
70° F (21° C)	2-3	4-5
100° F (38° C)	2-3	3-4

### Compression Gravel Extended, (ASTM C579) 2" cubes

Time (hrs)	Max load, lbf (kN)	Comp. strength, psi (MPa)
6	21,420 (95.3)	5,355 (36.9)
24	43,000 (191.3)	10,750 (74.1)
168	46,120 (205.2)	11,529 (79.5)

## APPLICATION

### SURFACE PREPARATION

#### CONCRETE

1. The concrete surface being repaired must be fully cured 28 days, structurally sound (200-psi or greater according to ASTM D7234), clean (ASTM D4258), and dry (less than 5%, ASTM E1907).
2. Contact WVCO for submersion applications.
3. Concrete surface must be dry and clean. Water or oil present can result in poor adhesion. Apply product only if surface temperature is 5° F (3° C) above the dew point to avoid application over damp surface.
4. Remove any contaminants before profiling surface.
5. It is recommended to profile surface according to ICRI Guide 03732 to a minimum of CSP 3 by abrasive blasting.
6. Saw cut area in shape of a square 1-3 inches (2.54-7.6 cm) deep, hammer (15 lb) spall area and remove debris. Remove all loose rebar, exposed rebar embedded in concrete can remain. Recommended repair size is less than 16 ft<sup>2</sup> (1.49m<sup>2</sup>). For larger repairs, contact manufacturer.
7. Use a minimum 120 PSI continuously dry compressed air to blow out the remaining loose debris, dirt and dust prior to applying product. Moist concrete can be torched dry. If moisture returns immediately after torching, stop and do not install FASTPATCH in this area.
8. Use a wire bristle brush to remove dirt on the concrete bond surfaces. Use compressed air after wire brushing on all bond surfaces.
9. As necessary plug all gaps, sinkers or joints surrounding the spall area. Use foam backer rod or other suitable filler.
10. Priming all concrete surfaces is recommended. Prime with POLYPrime or POLYQuik<sup>®</sup> IK Primer. Contact WVCO for proper primer selection. Refer to primer TDS for detailed instructions.

NOTE: For spalled areas it is recommended to honor joints or moving cracks by saw-cutting and or forming FASTPATCH. Contact WVCO for more details. For large applications it may be necessary to install control or construction joints. Contact manufacturer for more details.

#### STEEL

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 3mg/cm<sup>2</sup>, NACE 6G186, CHLOR<sup>®</sup> RID)

#### OTHER MATERIALS

1. Previously installed polymer materials must be tested to determine the best method of preparation to achieve acceptable adhesion. Consult WVCO for recommendations. Typically, methods will include removal, solvent cleaning, abrading, and or vacuuming surface.
2. FASTPATCH is not typically recommended for use on asphaltic surfaces. Exceptions do occur; contact WVCO for more details.
3. Avoid placing FASTPATCH on bare ground, dirt, grass or other non-structural surfaces.

#### GRAVEL INFORMATION

1. Use recommended FASTPATCH gravel for applications. Gravel MUST fully extend FASTPATCH. Gravel may be purchased from multiple sources. Suitability must be determined by the end user. Contact WVCO for recommended tests and evaluation procedures or for gravel approval. Gravel should be approximately 3/8" round rock that is washed and dried. Sourced gravel should have Mohs scale hardness:  $\geq 5$ .
2. Gravel makes up 40-50% of the repair volume when fully extended.
3. Typically 20-lbs (9 kg) of gravel is required for each gallon of mixed resin/iso.

#### ANCHORING APPLICATIONS

Suitability of FASTPATCH in any particular application is the responsibility of the engineer or specifier. Many anchoring applications, scenarios and geometries exist. It is the end users responsibility to determine final suitability.

1. Anchoring strength listed above was achieved by drilling out 1/8" over the size of the anchor bar to a depth of 6.0".
2. Clean anchor hole with appropriate flue brush, blow anchor hole with dry compressed air and repeat until the anchor hole is clean and free of dust, dirt or contaminants.

3. Apply appropriate amount of FASTPATCH into anchor hole and submerge anchor directly into liquid FASTPATCH. Anchor should be free of grease or surface contaminants. No scale or corrosion should be present. It is recommended to blast the anchor to SSPC-SP10/NACE No. 2 near white standard.
4. Verify anchoring strength is achieved for each location, frequency and cure time as per the engineer's or owner's requirements.

#### CARTRIDGE PROCESSING

1. Condition cartridges to approximately 70°F (21°C) for 24-hours before use.
2. Use a 32-element 13-mm diameter static mix tube with a pneumatic gun. Actuating by hand is not recommended due to the increased chances of poor mixing. Contact WVCO for further instructions if hand actuated applications are required.

#### APPLICATION

1. Use a 1-to-1 pneumatic or electric dispenser (maximum of 80 psi) and ensure that the dispenser is the proper size. Set dispenser to 20-30 psi and adjust as necessary.
2. Remove the retaining nut and caps from the cartridge.
3. Keep the cartridge upright during assembly.
4. Check alignment of plungers inside cartridge; level if necessary.
5. Place mix-tube on cartridge nozzle and hand tighten the retaining nut over the mix-tube.
6. Keep cartridge upright and load into applicator gun.
7. While pointing cartridge upright, trigger handle to remove any air trapped in cartridges.
8. Point cartridge over waste container and dispense initial material (20-40ml) outside the area to be repaired.
9. Fill in concrete from the bottom up. Avoid triggering on and off. In cases where concrete elevations differ, fill to the lower slab height.

NOTE: Application of any FASTPATCH cartridge should be performed continuously. Stopping before the cartridge is completely dispensed may result in the material setting up in the mix-tube.

#### METER PROCESSING

1. For meter applied applications contact Willamette Valley Company Precision Technologies Division for equipment recommendations.
2. Precondition the resin, iso and gravel to 70°F (21°C) for 24 hours before use.
3. 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. 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.
4. Test the meter operation and FASTPATCH before dispensing in spall area using a 13 mm diameter mixer with 32-elements. Dispense in test area to verify FASTPATCH material sets up in less than 3 minutes.

#### APPLICATION

1. Dispense FASTPATCH on the walls and ENTIRE floor of the void.
2. Place gravel in the void below surrounding surface by 0-0.25 in (0-0.64 cm). Gravel should be placed in repairs  $\geq 0.5$  in (1.28 cm) thick or material may pull away from surrounding substrate.
3. Insert mix tube nozzle in the lowest elevation of the gravel and dispense until FASTPATCH floats on the gravel. Move the mix tube to higher elevations while dispensing until the entire void is flooded with FASTPATCH.
4. Trowel (plastic) FASTPATCH level with surrounding surface. Avoid over-filling the void area.

NOTE: Material is workable for approximately 2-minutes at 70°F (21°C). Colder temperatures and cold gravel will slow the cure. Warmer temperatures will speed the cure.

NOTE: FASTPATCH is an aromatic compound. Discoloration from UV light may occur, however, the physical properties are unaffected.

#### CLEANING & MAINTENANCE

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

## 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](mailto:msds@wilvaco.com).

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