

INSTALLATION GUIDELINE: POLYQuik® Primers

OVERVIEW:

- Material and equipment requirements
- Surface preparation
- Application instructions

DESCRIPTION:

POLYQuik® primers are a group of products designed to promote adhesion between POLYQuik® coatings, POLYQuik® spray systems or FastPatch® repair products and one or more types of substrate. They also provide surface sealing to prevent blisters and bubbles in topcoat, add passive protection against corrosion and degradation, and improve durability of the topcoat. They may be useful for concrete, steel, aluminum, wood or some combination of those substrates. Some products are solventborne, others are waterborne, and still others are solvent-free. Consult the SDS and TDS for the product to determine what solvent, if any, is present.

POLYQuik® primers are generally two-component materials with a variety of chemistries. Polyurethane products have components labeled “Iso” for the isocyanate-functional side, and “Resin” for the amine and/or polyol-functional side. Epoxy products are labeled “Resin” for the epoxy-functional side and “Hardener” for the base and/or acid component. The components may also be called “A” and “B” respectively. Products are usually supplied in 2-5 gallon kits, although some products may be available in other packaging. Materials must be shipped and stored in dry conditions between 60-90°F (15-32°C). All handling recommendations detailed in the respective SDS must be followed.

As a general guide material thickness of 2-5 mil (50-125 micrometers) wet film thickness (WFT) is recommended. The thickness recommended for any specific application may vary from this guideline. When applied at 5 mil (125 um) thickness, applied yield will be 320 square feet per gallon of mixed material (6.7 square meters per liter), assuming 100% transfer. Dry film thickness (DFT) will be somewhat less than WFT after solvent has evaporated.

Each coating application is unique. Contact your WVCO representative for proper material selection, application and maintenance advice. Proper application is the responsibility of the user.

MATERIAL AND EQUIPMENT REQUIREMENTS:

The following materials and equipment are typically used during POLYQuik® spray applications. Individual requirements will vary depending on the details of your application.

Materials:	POLYQuik® topcoat (contact your WVCO representative for recommendations on selection and use of topcoat)
	POLYQuik® primer (contact your WVCO representative for recommendations on selection and use of primer)
	POLYQuik® Cleaner (for cleaning equipment)
	Dry topping sand (optional, to provide non-skid finish on horizontal surfaces)
Equipment:	Roller, ¼" (6 mm) nap mohair, 9-18" width
	Squeegee, 1/8" (3 mm) serrated edge
	Brush, nylon bristle, ½-2" (12-50 mm) width
	Mixers, electric or pneumatic
	Painter's tape and/or wire trim tape
	Plastic or cardboard for masking and mixing operation
	Personal protective equipment (consult SDS)

SURFACE PREPARATION:

CONCRETE

1. Contact your 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). For some FASTPATCH and EJC sealant applications that are not coatings, material can be applied to concrete newer than 28 days. In some cases, FASTPATCH applications can be made as soon as 24 hours from when the concrete was poured. Contact your WVCO representative for more details.
3. The surface must have low moisture vapor transmission (less than 3 lb/24 hr/1000 ft², RMA Test Method) unless the product is specifically meant for situations where high vapor transmission is possible.
4. Most POLYQuik primers are not suitable for application over damp substrates. They must not be used on standing water or where active leaks are present. Do not apply over concrete if vapor barrier is not present or unknown.
5. Profile the surface according to ICRI Guide 03732 to a minimum of CSP 3 by abrasive blasting or hydroblasting. Remove contaminants before blasting. If blasting cannot be done, grind or hand-tool the existing surface to remove any loose material, old coating and filler. Thoroughly clean the surface after blasting/grinding/tooling.

6. Fill all voids and cracks between 0.06-0.50" (1.5-12.5 mm) with Famocrete or one of the FastPatch family of products. Contact your WVCO representative for filler options and technical recommendations.

STEEL AND 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, 3 mil (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 ug/cm² is detected.
4. Contact your WVCO representative for primer selection.
5. Apply POLYQuik primer 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 as blasting and before flash rusting reoccurs.
6. Refer to primer technical data sheet for application and cure time information. For aluminum and galvanized metals, contact your WVCO representative for additional information.

WOOD

1. Store wood in a covered, dry location, and protect surfaces 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 Famowood or other suitable filler. Contact WVCO representative for filler options and technical recommendations. Remove any excess filler after cure by sanding until level with surrounding area.
3. Contact your 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 primer. 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.

APPLICATION INSTRUCTIONS:

MATERIAL PREPARATION

1. Precondition material to at least 70°F (21°C) for 24 hours.
2. One or both components of the primer may require mixing prior to use. Consult the TDS of the primer to determine which if any is required. Components containing isocyanate or epoxy functionality do not generally require mixing.
3. For materials supplied in drums: secure an air driven mixer with 3 folding blades in the center bung hole of the resin 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 mix the resin thoroughly. Mix for 30 minutes before spraying. Repeat above mixing instructions after every 8 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. Smaller containers may be mixed with an electric drill equipped with a D-shaped paddle blade, or manually with a paint stirrer, for 2-3 minutes. After the initial mix, scrape the sides and bottom of the container and mix for an additional 60 seconds.

PRIMING

1. Protect areas not to be coated by masking them with tape and plastic.
2. Priming helps to minimize out-gassing and pinholes when POLYQUik coating is applied on porous surfaces like concrete and wood. If priming, prepare the substrate according to Surface Preparation guidelines listed above. Refer to primer technical data sheet for application and cure time information.
3. Avoid blisters and poor adhesion by not applying primer in direct sunlight or when the humidity is above 85%. Apply the primer when the substrate temperature is stable or dropping
4. Clean surface of contaminants (i.e. dust, dirt) before application. Surface may be blown with dry compressed air or cleaned by tack cloth.

PROCESSING

1. Set up a mixing station near the application area. Protect the area from spills by working on a drop cloth or cardboard sheet.
2. Use entire kits whenever possible rather than trying to mix partial kits. Only work with an amount of material that can be easily applied within the working time of the product.
3. Premeasure the components at the proper volume ratio. Use a mixing container large enough to hold the entire mixture plus at least 10% to avoid losing material over the edges during mixing. Do not dilute with solvent, water or plasticizer unless specifically detailed in the product TDS.
4. Add components to the mixing container. Mix 60 seconds, then scrape the sides and bottom of the container and mix an additional 60 seconds. It is critical that the two components be thoroughly mixed. Signs of poor mixing include swirls in the material and soft, tacky material that does not set after application.
5. Once mixed keep a lid on the container until just before application. To ensure no unmixed product is applied, transfer the mixture to a clean container and perform the application from here, a technique called "boxing." Do not turn the mixing pail over and allow it to drain, or scrape the last remaining material out of the pail in case unmixed material remains in the pail.

CARTRIDGE APPLICATION

1. Some primer products are available in static mixed cartridges. This allows material to be dispensed already mixed and ready to use. Contact your WVCO representative for product availability and recommendation.
2. Condition cartridges to approximately 70°F (21°C) for 24 hours before use. Examine each cartridge before use to ensure no separation of the components is present.
3. Use a 1-to-1 volume ratio pneumatic dispenser (30-50 psi normal ram pressure, not to exceed 80 psi). Pneumatic dispensers are available through WVCO.
4. Remove the retaining nut and caps from the cartridge.
5. Keep the cartridge upright during assembly.
6. Check alignment of plungers inside cartridge. Adjust if necessary to put them into even alignment.
7. Place a mixer on the cartridge nozzle and hand-tighten the retaining nut over the mixer.
8. Keep the cartridge upright and load into the applicator.
9. Begin dispensing with cartridge upright to remove any trapped air.
10. Dispense initial material (20-40mL) outside the production area. Adjust air pressure as necessary to give optimum feed rate before dispensing production material.

11. Try to dispense an entire cartridge in one operation. Avoid triggering the dispenser on and off. Change mixers if dispensing stops more than 30 seconds at 70°F (21°C). Elevated temperatures decrease mixers' life.

SQUEEGEE AND BACKROLL

1. This technique is useful for large horizontal areas such as floors. Pour POLYQuik primer onto the surface in a thin ribbon and roughly place material with a 1/8" serrated squeegee.
2. Follow with a 3/4" nap mohair roller. To reach into corners and crevices, a smaller roller or brush may be used. Use nylon brushes for waterborne products, or natural bristle for solventborne.
3. Once the coating is placed, backroll perpendicular to the direction of the squeegee, removing any puddles and ridges in the coating.
4. Apply coating to approximately 2-5 mil (50-125 um) wet film thickness as a general guideline. Check thickness with a wet film gauge.
5. Remove any masking before the coating has set to avoid leaving tape residue.
6. When coating has set, remove any blisters or bubbles by sanding or scraping. Recoat only after the coating is cured hard and tack-free. Refer to the recoat window information on the product TDS.
7. For slip resistance sand may be broadcast onto the freshly placed primer to refusal. When primer has cured, remove excess sand by brooming and vacuum. POLYQuik coating is then applied over the sanded primer.

BRUSH

1. This technique is useful for small areas such as parts. Pour POLYQuik primer into a small container and work with a nylon bristle brush for waterborne or natural bristle for solventborne.
2. Apply primer with long, even strokes. Check thickness with a wet film gauge.

AIR OR HVLP SPRAY

1. Low viscosity (<200 cP mixed) primers may be applied with low pressure air spray. Pour POLYQuik primer into a small container and siphon from the bottom, or use an attached cup.
2. Apply primer with long, even passes. Check thickness with a wet film gauge.

AIRLESS SPRAY

PROCESSING

1. For large areas, complex shapes and hard to reach places, POLYQuik coatings may alternatively be applied with an airless spray system. Some systems may have too short pot life for this to be feasible. Consult the TDS for the product or contact your WVCO representative for recommendation.
2. Use a solvent-resistant air-driven pump with a maximum output of 1000 psi (7 MPa), which is typically a 10:1 ratio model. Use a spray applicator rated for the pressure input. Contact your WVCO representative for more information on pump selection.
3. Use a reversible spray tip to avoid clogging. Typical tip diameter will be 0.023" (575 um).

APPLICATION

1. Mix resin and iso as described above. Box the mixed material by transferring it to a clean container.
2. Place the mixed coating under the pump. Use only as much material as can be completely used within the material's pot life.
3. Purge the pump and hose of residual solvent and material by flushing with mixed coating.
4. Perform a test spray to ensure the pump and gun are operating correctly.

5. Spray product in a crosshatch manner to ensure full coverage and even thickness.
6. Check wet film thickness with a wet film gauge.
7. Purge the pump, hose and applicator immediately after application of coating with POLYQuik Cleaner or dry acetone to prevent material from setting in the system.
8. When coating has set, remove any blisters or bubbles by sanding or scraping. Recoat only after the coating is cured hard and tack-free. Refer to the recoat window information on the product TDS.

PLURAL COMPONENT SPRAY

PROCESSING

1. Some POLYQuik primers may alternatively be applied with a plural component spray system. These are generally fast-setting polyurethane materials which would be difficult to apply to large areas with manual equipment. Consult the TDS for the product or contact your WVCO representative for recommendation.
2. Use a metering system capable of at least 2000 psi (14 MPa) pressure, keeping stable pressure during spray, and keeping minimal pressure difference (less than 300 psi) between the two components. Temperature should be maintained at 110-150°F (43-65°C).
3. Contact your WVCO representative for recommendations on plural component meter and applicator setups. Meters and applicators are available through WVCO.

APPLICATION

1. Do not dilute materials with acetone or other solvents when spraying through a proportioner. This is a fire hazard.
2. When materials have reached application temperature, turn on pressure at the meter. Perform a test spray to ensure the system is functioning properly before spraying production material.
3. Spray primer such that no material puddles in crevices, bugholes or joints.
4. Backroll primer into porous substrates with a ¼" nap mohair roller. Work material into corners and crevices with a brush.
5. Check wet film thickness with a wet film gauge.
6. When coating has set, remove any blisters or bubbles by sanding or scraping. Recoat only after the coating is cured hard and tack-free. Refer to the recoat window information on the product TDS.

CLEANING & MAINTENANCE

Use POLYQuik Cleaner or dry acetone to clean applicators and parts after every use. Clean Y-strainers regularly. Cured product must be mechanically removed.

NOTE: Other techniques and methods can be used. It is the responsibility of the applicator to determine suitability and work flow.