INSTALLATION GUIDELINE:
POLYQuik® Joint Sealants

OVERVIEW:

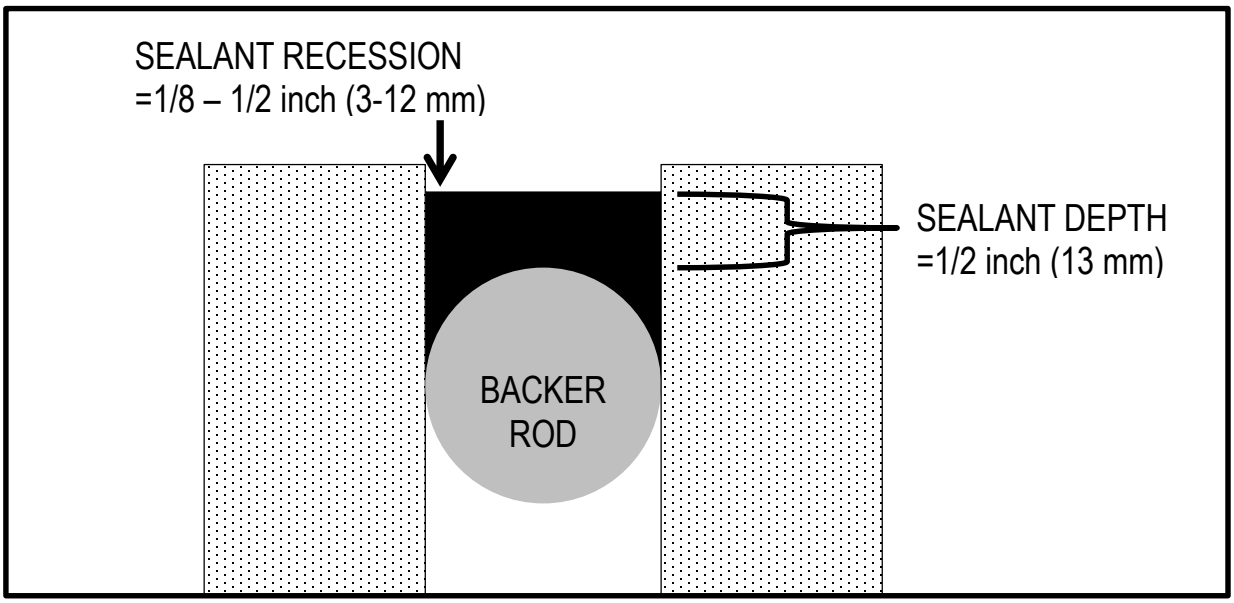
- Description
- Joint design
- Material and equipment requirements
- Surface preparation
- Application instructions

DESCRIPTION:

POLYQuik® Expansion Joint Compounds (EJC) are two-component polyurethane formulas designed to be installed in various kinds of joints where regular thermal and dynamic movement is expected. The sealant protects the joint from water and debris infiltration, freeze-thaw cycles and chemical degradation. Compared to other sealant types POLYQuik® sealants have the advantages of 100% solids formulas (no solvents), wide service temperature range (-30 to 190°F), fast application and cure, excellent physical properties, adhesion to concrete with or without primer, and excellent durability.

POLYQuik® EJCs have been tested according to the requirements in ASTM C920 to meet class 25, class 50, and class 100/50. The movement requirement of the joint should be considered when selecting the right POLYQuik® EJC for your application. Contact your WVCO representative for material selection, application and maintenance advice. Proper application is the responsibility of the user.

JOINT DESIGN:



As shown in the figure above, POLYQuik® EJCs should be installed slightly recessed, 1/8 to 1/2 inch (3-13 mm) below grade. They do not require tooling, but can be shaved if desired. Sealant depth at the center point should be 1/2" (13mm) for the entire length of the joint. Various backer rod tools, usually constructed of expanded polystyrene (EPS), are used to ensure proper depth. Backer rod should be 25% larger than the joint width as a general rule. Backer rod should be installed at a consistent depth, and should fit snugly in the joint to prevent sealant from leaking. POLYQuik® EJCs are not recommended for joints wider than 2 inches.

MATERIAL AND EQUIPMENT REQUIREMENTS:

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

Materials:	POLYQuik® EJC (cartridge or bulk material)
	POLYQuik® POLYPRIME (for applications requiring priming)
	Backer rod, closed cell, 25% larger diameter than joint width
	Dry topping sand (optional, to provide sanded sealant finish)
Equipment:	Cartridge applicator, 1:1 volume ratio, for 20 oz (600mL) cartridges. Battery-powered electric and pneumatic options available. Manual actuation not recommended.
	Compressor to provide air for blowing out joint at ≥120 psi and to provide 80 psi maximum for pneumatic cartridge applicators if necessary.
	Dry concrete saw
	Wire brush
	Painter's tape
	Plastic containers (for primer mixing and test dispense of EJC)
	Disposable paint brushes

APPLICATION INSTRUCTIONS:

SURFACE PREPARATION

NEW CONCRETE OR CONCRETE WITHOUT SEALANT

1. The concrete being sealed should be structurally sound (200psi or greater according to ASTM D7234), clean (ASTM D4258), and dry (less than 5%, ASTM E1907 or surface dry). POLYQuik® joint sealants can be applied to concrete newer than 28 days and in some cases as soon as 24 hours from when the concrete was poured. Contact your WVCO representative for more details.
2. Joint concrete surfaces must be sound, dry, clean, free of dirt, moisture, loose particles, oil, asphalt, tar, paint, wax, rust, waterproofing and curing/parting compounds, membranes and other foreign matter. Laitance and efflorescence must be removed prior to installation.
3. Clean concrete where necessary by grinding, abrasive blasting or hand tooling.

OLD CONCRETE PREVIOUSLY SEALED

1. Remove all previously applied joint sealing material by saw cut. Priming is required if previous sealing material is not removed by saw-cut (see PRIMING section below).
2. If joint sides have absorbed oils etc., cut away sufficient concrete to ensure a clean, fresh surface.

STEEL

1. Steel surfaces must be cleaned before blasting according to SSPC-SP1. Remove any sharp edges and other surface imperfections.
2. Dry abrasive blast surface according to SSPC SP-6/NACE No. 3 Commercial Blast minimum.
3. Test the surface for non-visible soluble salt contamination according to NACE 6G186. If necessary treat with CHLOR*RID or equivalent salt remover until less than 3ug/cm^2 is detected.
4. Priming is recommended. Prime steel according to WVCO guidelines.
5. Refer to primer technical data sheet for application and cure time information.

APPLICATION INSTRUCTIONS:

JOINT DESIGN

1. Choose the correct EJC product for your situation. For instance use EJC-25 only in joints where shrinkage and movement will be less than or equal to +/-25%.
2. EJC is not recommended for joints wider than 2" (50 mm). Wider joint installations may be possible in some circumstances. Contact WVCO for more information.
3. Joints filled with EJC should be designed and prepared according to ACI and industry standards. To ensure joint compound performs as expected, sealant depth should be ½ the width as a general rule. WVCO recommends a sealant depth of 1/2" (13mm) for all expansion joint repairs.
4. Self-leveling EJC should not be used on slopes greater than 9%. Slope grade products are available.
5. Backer rods should be used according to ACI guidelines in all expansion joints.

PRIMING

1. Priming is not required for all scenarios. Priming is generally recommended to ensure maximum adhesion and performance, particularly with demanding movement requirement and given the imperfect substrate surface conditions in most real-world projects. Prime with POLYQuik® POLYPRIME or other WVCO primer. Contact your WVCO representative for proper selection. The decision of where and when to use primer are ultimately the responsibility of the engineer and/or contractor.
2. Before using EJC on a non-standard substrate or using non-WVCO primer, testing is recommended to verify performance. Contact WVCO for assistance in adhesion analysis.
3. Masking tape may be applied to adjacent surfaces before priming and removed after sealant placement to ensure a clean application.
4. Apply primer in a thin, uniform film (typically 1– 10 mils). Refer to the primer technical data sheet for application guidelines. Avoid excess film thickness and application of primer beyond joint faces.
5. Allow primer to cure according to guidelines in the technical data sheet before applying EJC. Joint sealant application times will vary with primer selection and ambient temperature.

METER DISPENSED

PROCESSING

1. Use WVCO meter or equivalent at a 1 to 1 ratio by volume. For metering applications contact WVCO Precision Technologies division for equipment recommendations.
2. Condition resin and iso to approximately 70°F (21°C) for 24 hours before using.
3. Mechanically mix resin for 30-60 minutes before use. Do not overmix as this could introduce excessive air. Use mix blades that are 1/3 the diameter of the container.
4. Test the meter operation by dispensing material for 15-30 seconds into a waste container before dispensing production material. Use a 13-mm diameter mix tube with 32 elements or recommended equivalent (contact WVCO for more information). Verify mixed EJC product is uniform in appearance, and the material sets into a homogeneous finished product.

APPLICATION

1. Dispense EJC into the jointing area using a pressure that allows sufficient production speed and does not produce splashing when material hits the backer rod.

2. Application pressures and dispensing rates will vary with joint configuration. Pressures should not fall below 40 psi on WVCO meters. Shallow joints will require lower application pressures compared to deep joints.
3. Fill the joint from the bottom up in one pass and avoid overfilling (typically expansion joints are recessed). Avoid triggering the applicator on and off. In cases where slab elevations are different, fill according to the lower slab height.
4. Topping sand can be applied until refusal while the surface is still tacky.
5. Stopping more than 30 seconds can clog mix tubes. Change mix tubes if dispensing stops for more than 30 seconds at 70°F (21°C). Elevated temperatures decrease mix tube life.
6. Periodically inspect applied jointing material for uniformity and proper set. If inspected areas are non-uniform, change mix tube and perform another test dispense before resuming.

CARTRIDGE DISPENSED

PROCESSING

1. Condition cartridges to approximately 70°F (21°C) for 24 hours before using.
2. Use a 13-mm diameter static mix tube with 32 elements or equivalent, with a pneumatic or battery-powered gun. Hand actuated dispensing guns are not recommended due to the increased chances of poor mixing. Contact WVCO for further instructions if hand actuated application is required.

APPLICATION

1. Use a 1-to-1 volume ratio dispenser (normally 30-50 psi ram pressure for pneumatic, not to exceed 80 psi) and ensure that the dispenser is the correct size for the cartridge. Pneumatic and battery-powered dispensers are available through WVCO.
2. Remove the retaining nut and caps from the cartridge.
3. Keep the cartridge upright during assembly.
4. Check alignment of plungers inside cartridge; adjust 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. Begin dispensing with cartridge upright to remove any trapped air.
8. Dispense initial material (20-40mL) outside the repair area.
9. Change mix tubes if dispensing stops more than 30 seconds. Elevated temperatures decrease mix tube life.
10. Fill the joint from the bottom up in one pass and avoid overfilling (typically expansion joints are recessed). Avoid triggering on and off. In cases where slab elevations are different, fill to the lower slab height.
11. Topping sand can be applied until refusal while the surface is still tacky.

NOTE: Material set time is approximately in 1 hour at 70°F (21°C). Colder temperatures will slow the cure. Warmer temperatures will speed the cure. Material should be checked before return to service.

NOTE: EJC volumetric requirements for linear feet calculations will vary based on joint dimensions. Contact WVCO or consult the technical data sheet for more information.