Let’s Fill This Joint!

Although there are many brands of concrete joint fillers out there, I think we can agree that the installation process is similar for most. If you’re new to the game, here is a step-by-step overview of the basics.

Prepare The Joints Before Filling

Due to dirt and debris being tracked into the saw-cut joints during slab curing, the joints must be cleaned out (usually with a walk-behind floor saw), faces of the joint must have an open surface texture, and edges must be clean and squared. Joints to be filled must be clean, dry, and free of any sealers, curing compounds, densifiers, dirt, oil, debris, or anything else that may inhibit bonding. Use a vacuum and oil-free compressed air to remove any additional dust and debris immediately prior to filling.

Pumps vs. Cartridges

For large-scale projects that require more material, you’ll want to use a commercial pump system. These systems consist of two tanks for your A and B parts (compatible with both polyurea and epoxies), a pressurized applicator that can control the dispensing volume and adjust mix ratios, and static mixing nozzles. This is standard issue for most commercial contractors.

For smaller or repair projects, materials are often available in smaller 1 gal kits (which would be mixed and either applied with a standard bulk gun, or just poured from the mixing bucket into the joint), or side-by-side cartridges for convenience and minimizing waste. *Cartridge option is recommended for first-timers on small or repair projects.*
Materials needed for larger jobs:

- Element Static Mixer Nozzle
- Two-component commercial pump with pressurized applicator wand
- Joint Filler Material - individual A and B parts
- Floor Scraper and blades
- Empty 5 gal bucket
- Dry silica sand to prevent 3-sided adhesion
- Appropriate PPE
Materials needed for smaller jobs:

- Element Static Mixer Nozzle
- Double Barrel (side-by-side) Gun
- Joint Filler Material
- Empty 5 Gal. Bucket
- Floor Scraper and blades
- Dry silica sand to prevent 3-sided adhesion
- Appropriate PPE

Filling Joints

After all joint preparation is complete per material manufacturer’s written preparation/installation instructions, start by;

Larger/new construction projects - pour Part A and Part B in the appropriate sides of the plural-component pump. Attach the static flow mixing nozzle to the end of the applicator wand.

Smaller projects/repairs - open the epoxy cartridge set and shake well, unscrew the cap and remove the stopper (make sure to save the cap and stopper for storing any unused product once you’re done). Attach the nozzle through the cartridge cap and screw firmly onto the cartridge set, being careful not to remove the plastic divider separating parts A and B. Pull the plunger all the way back on your double-barrel gun and insert the cartridges, then gently advance the plunger until it butts the product.

Plan out your path - start in a corner or against a wall, and make sure all debris and obstacles are cleared away. Once you start your application you will not want stop for long or the product will begin to harden inside the nozzle, especially the polyurea.
Advance a few ounces of product into an empty bucket to ensure the parts are thoroughly mixed in the nozzle, then lower the tip into the joint and begin application. The product should fill the joint completely. As you advance toward the applicator, it is important to allow the product to slightly overfill the lip of the joint. (You will be scraping away the excess later on.)

When all the joints are filled disengage the trigger on your gun and allow the excess product to drip into the empty bucket. Unscrew and discard the static flow nozzle (for cartridges, replace the original cap and stopper to store your unused product).

Be sure to follow the manufacturer’s instruction on material storage procedures and cleaning and maintenance of the pump for future use.
Additional Tips:

Installing joint filler should take place as late as possible (60-90 days following slab placement) to maximize shrinkage of the slab, per ACI 302.

Most joint filler products should be filled to full joint depth. Make sure to overfill joints slightly and shave smooth following manufacturer’s written instructions and product data sheets. Be mindful of other variables such as jobsite conditions, other trades’ interference, personal safety near and around large machinery, humidity, and both substrate and ambient temperatures.

Use this chart to estimate the amount of material you’ll need for your project.

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Lineal Feet per Gallon
For more information on how to install concrete joint fillers, and available products, go to:
https://www.whitecap.com/shop/wc/specchem-rapidflex