# Summary of Stonelok E3/2K Instructions

**Always first read and understand the manufacturer's instructions.**
**These can be found at:**

**www.rjsconline.com**
Click on Document Index, then scroll down.

The application process for sealing concrete with Stonelok E3/2K consists of four major steps:

1. Preparation
2. Surface Conditioning with OS/W
3. Application of Stonelok E3 epoxy
4. Application of Stonelok 2K urethane

## Step 1. Preparation

Preparing the concrete for sealing is an important step to ensure long term adhesion. It is beneficial that all surface voids and pinholes are grouted. Additionally, the surface should be either honed to no smoother than as 200 grit finish or the concrete surface has been acid etched to provide microtexture for the E3 epoxy to bond to.

Coatings such as Stonelok E3 and 2K should never be applied to concrete that has been polished, thoroughly densified or left as a smooth, as-cast surface. Thorough and reliable adhesion depends upon the concrete surface having some microtexture (or "tooth") for the coating to adhere to.

Concrete that is left in an as-cast finish (meaning it has had no honing done to it) or concrete that has only been lightly processed with very fine grit (400 grit and finer) diamonds or wet/dry sandpaper must be acid etched before sealing.

Acid etching is often done with a dilution of muriatic acid and water. This acid solution is then evenly applied to the concrete and left on for several minutes while the acid etches and partially dissolves the surface cement paste. Acid etching should only slightly roughen and dull the surface; it should not be so aggressive that it exposes aggregate.

To make an acid etch solution, add one part of muriatic acid (by volume) to 4-6 parts water. Always add acid to water; never add water to acid. Adding water to acid is dangerous because strong acids (like muriatic) can have a violent reaction with water; also the acid is very strong and concentrated in the container, and only becomes dilute once all of the water has been added. Any splashing that occurs will disperse concentrated acid. By adding acid to water, splashes are more dilute and safer.

To acid etch the surface of concrete, first thoroughly wet the concrete with water. It's better to flood the concrete so that when the acid solution is applied it does not burn spots into the surface. The pre-wetted concrete keeps the acid on the surface and helps dilute and spread it out.

Acid solution can be sprayed on, brushed or wiped on. Spraying (with an acid-resistant sprayer) gives the best results because the acid is spread more evenly and is applied more gradually. Brushing and wiping apply more solution to a smaller area and could create etch marks that may be visible after sealing.

When applied, the acid solution should fizz slightly and show signs of bubbles (much like carbonation bubbles in soda or beer). If the solution foams up, it is too strong and you will “burn” the concrete, meaning too much etching is occurring. If the solution does not fizz at all it is too weak.

Apply the acid solution to all surfaces that will be sealed. Allow the acid to sit on the concrete for several minutes before washing the surface clean with water. Squeegee the excess water off and use a towel or sponge to remove any etching residue. The surface should look dull and feel slightly rougher. If it is not dulled and roughened, repeat the process with slightly stronger acid.

After achieving a satisfactory etching, neutralize the concrete using a solution of household ammonia (suds-free). One part ammonia to 4 parts water works well (but so does straight ammonia). Use a green Scotchbrite pad to scrub the surface while it is wet with the ammonia solution. This helps spread the ammonia and loosen any etching residue. Rinse the surface clear with water and wipe down with a clean towel. When the surface is clean there should be no residue evident on the towel.

Allow concrete to air dry overnight.

## Step 2: Surface Conditioner (OS/W)

Note: Ambient conditions: >60°F <85°F; surface clean and dry. Concrete should be cured for a minimum of 7 days; remove all laitance, form release agents and surface contaminants.

To treat 60 – 75 square feet: mix 30mL Activator in 400mL water (tap water is acceptable).

Ratio = 1 part OS/W : 13.33 parts water.

6 to 7 mL diluted Conditioner treats 1 square foot of concrete. A pint of concentrated Conditioner treats 1100-1400 square feet of concrete. Once mixed diluted Conditioner is useable for up to 7 days when stored at room temperature.

- Mix thoroughly and apply evenly.
- Wipe on to wet the concrete. Do not puddle.
- Let dry 30 minutes to 1 hour. Use fan to speed drying.

Apply only 1 light, even coat. Uneven reapplication will result in a blotched or streaked appearance after sealing. A lint-free microfiber cloth works best.

Top coat at any time up to 1 week; surface must remain clean and uncontaminated.

## Step 3: E3 Primer

Note: Ambient conditions: >65°F <85°F; humidity <60%. Provide good air circulation. Very low temperatures will inhibit curing; very high temperatures will flash cure the surface and trap moisture, resulting in hazing and incomplete curing. High humidity will inhibit curing.

Concrete must be free of laitance, form release agents, other contaminants or standing water. Air dry concrete is best.

Mix ratio (by volume): 3A : 1.05B (or 1A : 0.35B); a 3A:1B ratio will cure ok, but the 5% extra part B results in a much better cured film.

- Mix for 1 to 2 minutes.
- Let sit for 10 minutes (induction time at 70°F)
- Pot life is 45 minutes at 70°F.
- For spraying, dilute with water 5% as needed only after induction is complete.

Apply with short nap (3/16”) roller or sprayer to achieve an even coating with a wet film thickness of 4 to 6 mils (0.004” to 0.006”) thick.

Top coat with Stonelok 2K after coating is totally clear and finger print-free (about 8 hours).

- Apply 1 coat of E3 for general countertop use.
- Apply 2 coats of E3 for wet areas like integral sinks, shower basins and tubs.

E3 may be recoated with itself anytime between 8 to 48 hours after initial application without requiring surface sanding. Recoating may be done after 48 hours but surface abrasion is necessary. Cured E3 may be sanded with 220 grit sandpaper to remove surface blemishes, smooth runs or scuff the surface.

- Always wipe down the surface with a plain water-damp microfiber cloth just before topcoating with 2K. This removes dust and other contaminants. A 50% water, 50% acetone solution may be used if fingerprints or oil has contaminated the surface. Do not let this solution puddle or soak the surface.

Coverage is roughly 325 to 400 square feet per gallon when rolled, depending on porosity of concrete. This works out to a wet film thickness of 4 to 5 mils.

## Step 4: 2K Accelerated Xlow Gloss Sealer

Note: Required ambient conditions: >65°F <85°F; humidity <60%. Provide good air circulation to aid moisture evaporation. The ideal conditions are 70°F and <60% humidity.

Apply over E3 Primer 8 to 24 hours after final E3 application.

- Stir Part A thoroughly to suspend flattening agent. Stir for 1 to 2 minutes.
- Mix ratio (by volume): 2A : 1B
- Mix for 1 to 2 minutes.

Induction times for XLow Gloss:

65°-80°F: 15 minutes

80°-90°F: 10 minutes

90°-95°F: 0-5 minutes (not recommended)

Note: Gloss and Low Gloss finishes have longer induction times. Consult RJSC instructions.

If sealer components are cooler than 65°F, warm bottles by immersing them in warm tap water for 15 minutes or until stirred components reach desired temperature. If sealer components are warmer than 80°F, cool bottles by immersing them in ice water for 15 minutes or until stirred components reach desired temperature. Base the induction time on the temperature of the sealer components at time of mixing.

- After Induction time is complete dilute sealer with 25% tap or distilled water.
- Stir for 2 minutes.

Pot life is 1 hour at 70°F. Pot life decreases rapidly above 70°F. Longer than recommended induction times (even by as little as 5 minutes) can decrease pot life by 50%.

- Apply 1 coat of 2K for general countertop use.
- Apply 2 coats of 2K for higher wear areas like floor tiles.

Apply with a sprayer to achieve a smooth, even coating with a wet film thickness of 4 to 6 mils (0.004” to 0.006”) thick.

Blot any drips or runs immediately. Do not allow to puddle.

Maintain cross ventilation to accelerate moisture removal. The faster moisture is removed the better the cure and the better the finished appearance. Slow moisture removal increases film sheen.

Surface is touchable in 2-3 hours, print free in 5-6 hours and can be handled in 8-9 hours. Recoat in 8 to 24 hours. Sand surface for recoating after 24 hours to ensure good bond. Full cure in 3 to 4 days.

Covers varies and ranges from about 200-300 square feet per gallon when sprayed on.