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A Visit to Your Favorite Ports

Do you always think about alternative porting methods as you prepare to bid a crack repair project?

Maybe not. Yet the method selected by your field technician may make a significant difference in the quality, linear footage productivity and job profitability.



With a goal of filling a crack quickly, neatly, and completely, the factors to consider are:

- Crack width and substrate thickness
- Application temperature and moisture
- Orientation (ceiling, wall or floor)
- Gross linear footage
- Access limitations

- Surface appearance after repair
 - Avg. time on port
- Many of our customers use a combination of several porting methods:

Tape Low cost ports are established as gaps in the seal with quarter inch masking tape applied at the proper interval prior to the surface seal. The tape is pulled before the seal hardens completely. With hand pressure, the injection mix head contacts the open gaps left by the tape through a compressible rubber grommet. After the port is filled, soap or wax is rubbed over the crack to seal the port.

Tips, pins, nails, straws, golf tees and toothpicks These alternatives to tape often require no drilling. Sometimes they are used in combination. For example, often rubber tips are located along the crack with toothpicks, (or pins or nails) prior to the seal application. To inject, the toothpicks are

withdrawn and the mix head nozzle is inserted into the tip.

Surface ports Injection molded of various plastics, surface ports have become popular in the last 10 years. These consist of a flat base flange perpendicular to a tube for easy connection to the injection equipment using a press-to-fit connection. Although more costly, field technicians appreciate the benefit of not having to hold the injection head against the port, particularly on ceilings or when time on port will be high. [Check out Kemko's new port below.](#) *Hint*, it's the only one to pull concrete!!



Drilled Ports for drilled holes can be made by the contractor at low cost by cutting sections from 1/4 or 3/8" polypropylene supply hose, purchased as pre-molded units or supplied as a tapered "Semko" tip. This method is one of the first choices when injection flows are obstructed by the type of crack, surface obstructions, plugging, or for accessing voids under a sound surface (such as a de-bonded topping slab). If the crack is narrow, a water-flushed core bit is superior to an impact bit as it is less likely to fill the crack around the hole with drill fines.

World Class Surface Seals

Now that you have selected your port, the task is to contain the injection epoxy within the crack with a seal. Below is a summary:

QuikSEAL 046 Recently changed to a 1:1 ratio and thickened up a bit, this is the workhorse product for sealing in a variety of conditions.

LP 028 and SP 009

Pastes Our thickest seals can hold overhead ports in hotter

weather, have 1/2" of sag resistance and often are used for patching or fairing. Can be mixed with the twin liquid products (001 and 008) to fine tune viscosity. 028 has very low exotherm.

LoTempSEAL (019)

Best amine-cured system for low temps and very wet conditions. Medium speed.

(Continued on back)

*Makers of
Construction Polymers.*

**Call us anytime
between 6:30-5 Pacific**

PUMP NEWS

Model B The case is now anodized gray using a new process that resists all tough solvents. We've also improved the seal on the reservoirs, so no more leaks when horizontal! We also have a new design for pressure checks.

Model C Using an extra control line, the Model C pressure and pumping rate can now be adjusted remotely (at the mix head). Retrofit kits are available. We also offer mix head options and a new custom Kalrez shaft seal for large volume pumping without leaks.

**World Class Seals
(cont'd.)**

SuperSEAL (022) Recently reintroduced in a very low odor formulation, this very fast product is used when you need to inject within an hour or in the cold. Now you don't have to carry around the mercaptan odor on your clothes all day!

StripSEAL (136) For critical seals where the substrate can't be marred, this seal is one-of-a-kind! Proper proportioning and mixing is the key to a flexible seal which can be left overnight on a moving crack without splitting and removed by peeling. Like 022, its cure is not affected much by cold weather. Excellent for pre-cast panels.

1:1 SP and LP Pastes

Stiff Stitching

Is there a simpler, less costly method to provide additional support to existing structures? Yes, the non-proprietary procedure is a related to steel plate bonding and is commonly called rebar stitching. It may often be an efficient alternative to glass or carbon fabric wrapping, but since no company is actively marketing it, often the structural engineer doesn't even consider it. The repair is often fast, inexpensive and requires no special tools.

Installation is straightforward. First, it is critical to know the depth of coverage of the existing steel so that the old reinforcement is not damaged. The engineer calculates a requirement for increased strength, estimates a safety factor and then creates a pattern of steel or FRP reinforcing bar to be installed. The contractor saw cuts channels at specified depths in the concrete surface, ties the bar together at intersections, then fills the channel with a structural grade epoxy adhesive. If the channel lies on a horizontal deck, the filling is by gravity, otherwise the channel may need to be sealed with a temporary overlying form so the epoxy paste or liquid can be pumped into the hollow space. Unlike fiber wrapping systems, dowel holes can be drilled in any direction to better anchor the bar placed in the surface channels.

What type of repair might qualify as a candidate for rebar stitching? Parking and bridge decks, slab on pan floors, locally overloaded areas, missing or insufficient rebar, anchoring large patches and spall repairs to sound concrete, beams and piers—all might be excellent stitching applications. Stitching benefits include: a) fast installation, b) localized repairs, c) low material and labor costs, d) no special equipment required, e) damp and wet substrates are OK and f) repaired surface can bear traffic. Call us if you need an adhesive recommendation for stitching.

KEMKO	Pot life @ 73/40°F, min	Cure time @ 73/40°F, hr	Suggested use	Damp Surface Rating
022 SuperSEAL	7/18	0.7/1.2	30°F, Very fast cure	3
046 QuikSEAL	5/20	1.5/5.0	40°F, All purpose	2.5
019 LoTempSEAL	18/90	3.5/10	70°F, same day, 40°F, overnight	1 (best)
009 SP Paste	35/240	7/24	50°F, overnight cure, thickest	2
028 LP Paste	120/long	19/long	70°F, overnight cure, thickest, low exotherm	2
136 StripSEAL	5/9	0.9/1.5	30°F, no grinding, flexible	4 (dry only)
169 SP Paste 1:1	35/240	7/24	50°F, overnight cure, thinnest for pumping	2
170 LP Paste 1:1	120/long	19/long	70°F, overnight cure, thinnest, low exotherm	2

(169 and 170) These are low viscosity twins to the 028 and 009 pastes especially formulated for working with our Model C paste pump. Not only can they seal, but the

thicker material is excellent for crack injection on large cracks or when the backside can't be sealed.

Specials We make lots of

custom products—even for underwater, so please call if you have an unusual requirement. For large applications, think about the Model C!