SealBoss®

Guideline/Catalog

LEAK-SEAL & WATER STOP

CONCRETE & CRACK INJECTION SYSTEMS

How to Choose Products, Packers, Pumps

SealBoss ® 1-2-3 at 45 Degree Crack Injection ™

SealBoss ® Curtain & Bladder Injection

SealBoss ® Pumps, Packers, Injection Tube

32 YEARS 1988-2020

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Choosing Your Products:

Choosing the product with the correct properties for the job is the first step to a successful and long lasting leak-seal and crack injection application. Material with the appropriate physical properties simplifies the application and provides for long term durability. SealBoss offers a wide selection of hydrophilic and hydrophobic products with varying degrees of properties such as viscosity, expansion rate, reaction time, flexibility, density and hardness. Please contact your SealBoss representative for more info.

Hydrophobic & Hydrophilic Product Groups

SealBoss 1510/1570/1570LV/1500 Water Stop Foam grouts are hydroactive **hydrophobic** products that share common properties. Water/moisture initiates the reaction only, but the cured product is insensitive to moisture and of a constant volume. Since water is not a component of the foam structure, the cured material is essentially not effected by water or dryness and does not shrink or swell. Products are not effected by freeze/thaw and wet/dry cycles. **SealBoss 1640 Foam & SealBoss 1403 PUR Resin are hydrophobic products** that do not require water to react.

SealBoss FlexGel & SealBoss 2400 Acrylate (Acrylic) Gel are hydrophilic products. Water/moisture initiates reaction and the product is capable of absorbing and incorporating water post cure, thereby swelling and forming a waterproofing flexible gel or foam. Hydrophilic products are recommended for applications in permanently moist environments, curtain/bladder injection, and capillary injection.

Viscosity

SealBoss 1510/1570/1500 Water Stop Foams & Flexgel are of low viscosity for good penetration into concrete cracks and joints. For hairline cracks, capillary fissures and tight cold joints we provide super low viscosity products such as **SealBoss 1570LV Water Stop Foam, SealBoss 1403 PUR Resin, SealBoss 2400 Acrylate (Acrylic) Gel**.

Accelerator Adjustable Hydro Active Expansion & Reaction Time

The reaction times and expansion rates of **SealBoss 1510/1570/1570LV Water Stop Foams** are **adjustable** by adding a specific amount of SealBoss accelerator. The gel times of **SealBoss 1403 PUR Resin & SealBoss 2400 Acrylate (Acrylic) Gel** are also adjustable.

The reaction time and expansion rate of a foam determine the water stop and penetration properties of the product. Faster reaction times and expansion benefit water cut-off properties, slower reaction times enhance product penetration in the substrate.

Water-reactive polyurethane grouts expand on contact with water by the resulting CO2 gas. The foam expansion creates a **compression seal** which supports the sealing properties of the injection grout. Rapid expansion helps to cut-off high-volume active water leaks and benefits curtain/bladder grouting. The expansion rate of a foam determines material consumption, cell structure and density of the cured product. It should be considered that expanding foams can create a significant amount of pressures. Our best-selling, industry standard **SealBoss 1510 Water Stop Foam**, can rapidly expand between 5 to 50 times (50X) of free rise product volume when catalyzed accordingly.

Flexibility & Density

For most injections in joints, cracks and some curtain/bladder wall grouting that do not experience much movement, semi flexible standard products with high expansion rates and higher compressive strengths such as **SealBoss 1510 Water Stop Foam, SealBoss 1500 2-Component Water Stop Foam** are used. Structures exposed to thermal expansion and contraction or dynamic loading resulting in increased movement may require a flexible formulation grout such as **SealBoss 1570/1570LV Water Stop Foam, SealBoss 1403 PUR Resin or SealBoss Flexgel. SealBoss 1403 PUR Resin** is also recommended as follow-up and final seal injection in critical foam injection areas.

Good product density, complete penetration and adequate product consumption make for a successful leak-seal injection. Injection pressures must be high enough to provide for good material travel, proper penetration and density. We recommended to always monitor injection pressures and material flow closely. When done correctly, the high density injection material will form a compression seal and provide for a or a long lasting application.

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Step 3: Injection Procedure with SealBoss® WaterStop Products

Important

Prior to injection please read instructions on the product datasheet. Before preparing the SealBoss® WaterStop Product for injection make sure your pump is fully operational and completely free of any moisture. It is good practice to flush the pump out completely with SealBoss R70 prior to introducing any resin/foam grout. Contact your SealBoss rep with any question you may have.

Injection Procedure

When your products are ready for injection have a cup handy to dispose of some resin to assure purity. **Always start the pump at the lowest pressure setting.** After coupling your grout injection hose to the secured and tightened packers, begin the injection process.

Starting from the bottom up, connect your injection line securely to the packer and begin with the lowest pressure that will move resin into the crack. Typically injection pressure will drop as soon as the material flows but pressure may have to be increased as products thicken and move into tighter cracks and fissures. Keep injecting at a slow rate as resin starts to show and flow from the crack. You may want to stop and restart the process for a minute to permit material to react and thicken. Monitor the consumption rate and stop injection when consumption equals leakage. A common observation will be the decrease of water flow from the face of the crack and/or reacting material exiting the face of the crack. This is a good indication of successful penetration and results. When the product does not move further along the crack disconnect and move to the next port. Utilize the shut-off valve at the end of your injection hose whenever the hose is moved. **Depending on the equipment you may have to manually stop the pump first.**

The applicator must ensure that adaquate volume of material is injected into each crack to achieve good product density for a durable seal. It is advised is to inject 2-5 ports with observable penetration, and then go back to reinject those 2-5 ports once again to ensure adequate material consumption. Packers that still consume considerable amounts of product should be injected a third time or as much as necessary to create a permanent seal.

SealBoss® Oakum Technique

If too much resin is flowing out, or washing out due to high water flow, you can use resin soaked SealBoss® Oakum to create a temporary plug to give the product time to react, expand, and seal.

Caution: Be prepared, product may shoot out from the structure or around the drill holes. Packers may blow out. Due to the use of high pressure injection equipment, product may travel further than expected and may show up many feet from the point of injection. Small cracks may show up that had been invisible prior to the injection process.

Most commonly used hydrophobic polyurethane foam grouts

SealBoss® 1510 Water Stop Foam & 15x Accelerator
SealBoss® 1570 Water Stop Foam & 15x Accelerator

Adjust reaction times based on flow rate and application variables by adding 15x accelerator accordingly in the range of 2-25%. Most common crack leaks are repaired with a 5% solution. This is roughly 7oz. of SealBoss® 15x Accelerator per 1 gallon of SealBoss® 1510 or SealBoss® 1570. For gushing leaks, 25% accelerator solution will provide quick results.

Other hydrophobic PUR products

SealBoss® 1570LV & 1500 Water Stop Foam
SealBoss® 1500 & 1640 Hot Shot Cartridge System
SealBoss® 1403 PUR SLV Injection Resin

Hydrophilic injection products

SealBoss® FlexGel and
SealBoss® 2400 Acrylate Gel

Staggered port placement on vertical crack.

Packer placement, staggered, at 45 degree angle.

Hose set coupling to installed mechanical packer.

Quality Injection Job

Often injection is a two man job – you need someone operating the valve and hose-and another manning the pump.
Create a dense seal! It is quite possible to achieve differing results on the same injection application due to inadequate material consumption alone. If the crack is not accepting any product, you may not have drilled deep enough or the crack is directed in the opposite side. In this case, drill from the opposite side of the crack and ensure to intersect the crack.

Packer Removal

After allowing the material to fully cure, packers can be removed by loosening the shaft. Some applicators leave the rubber base in the wall and then patch the drill hole while others remove the entire packer prior to patch. In some injection applications packers even remain in place permanently. This is the applicator or owner's preference. A final cleanse of the face of the crack is necessary to remove cured product via wire brush, pressure washing, etc. The substrate is now ready for final finish.

SealBoss® R70 Pump Flush for Clean-up

DO NOT CLEAN WITH WATER. If permitted on the job, flush all dispensing equipment initially with a small amount of solvent such as xylene to cut the product. Follow this step by flushing generously with SealBoss® R70 Pump Flush & Cleaner for protecting hoses and for pump lubrication purposes. Do not use solvent for the final flush as it will diminish the life of your equipment. Exception: Equipment for SealBoss® 2400 Acrylate is cleaned with water. See data sheet for details.