

# AKWASEAL® LV

## LOW VISCOSITY, POLYURETHANE CHEMICAL GROUT

### DESCRIPTION

AKWASEAL LV is a hydrophobic polyurethane chemical injection grout designed to stop water infiltration through concrete cracks, joints, fractures, and unproperly consolidated areas. AKWASEAL LV is injected as a liquid directly into a leaking crack, fracture, hole or joint. After injection, the grout reacts with water and forms into an expanding foam that fills the void. The cured foam adheres to the concrete within the crack to form a impermeable, elastomeric seal.

The seal works in three ways. First, it forms a chemical bond to the surface area. Second, it forms a mechanical anchor in the irregular surface areas of the joint. And third, through expansion, a compression seal is formed within the crack, fracture or hole. The elastomeric and flexible properties of the cured foam allow it to resist cracking or pulling apart and to stand up to freeze/thaw and wet/dry cycles.

AKWASEAL LV is non-corrosive, and adheres well to most surfaces including concrete, clay tile, metal, wood, stone, mortar and brick.

In addition, AKWASEAL LV can be applied without the need to stop the seepage or leaks prior to application. The grout bonds to wet or dry surfaces.

When it comes in contact with water a chemical reaction occurs changing the product to a dense polyurethane foam through which water will not pass. After curing it forms a flexible gasket and an effective barrier to water infiltration.

### PACKAGING

AKWASEAL LV is available in 5-gallon plastic pails; 36 pails per pallet. Each 5-gallon (18.9 liter) pail is shipped with a one pint (0.48 liter) can of catalyst.

### INSTALLATION

**Preparation:** The procedure for repairing concrete cracks and joints is essentially the same. Drill 5/8" holes at a 45° angle to intercept the crack or joint at approximately one-half the thickness of the concrete. Holes should be drilled at appropriate intervals to ensure full infiltration of the crack/joint with AKWASEAL LV. Typically holes are drilled 12" (600mm) apart along the entire length of a hairline crack, alternating the side of the crack as drilled. Set a 5/8" injection packer into each drilled hole. After setting the injection packers water should be injected to remove dirt in the crack or to moisten dry cracks prior to injecting AKWASEAL LV.

**Mixing:** In a separate clean plastic pail, only mix enough product for immediate use. It is not standard practice to mix the entire 5-gallon pail at once in the original pail. The mixing ratio is 40:1 (one pint of CATALYST to 5-gallons of AKWASEAL LV). While stirring the grout, slowly pour in the catalyst to evenly disperse it into the grout. Do not pour the catalyst into the grout all at once and then try to mix it. Care should be taken not to aerate the mix.

Test mix the ratio by placing a small amount in a separate disposable container and stir in a small amount of water. When properly mixed, (40:1 ratio), the grout should start a foam reaction within 45 seconds at 70°F. 50% RH. To slow the reaction time, decrease the catalyst amount to a minimum one-half pint (80:1 ratio) To speed up the reaction time, increase the amount of catalyst to a maximum two pints per 5-gallons (20:1 ratio). (CAUTION: Additional catalyst shortens the pot life of the product significantly. Do not exceed two pints of catalyst per 5-gallons of AKWASEAL LV.)

**Injection:** Starting at the base of the wall, pump the catalyzed AKWASEAL LV through the injection packer. Typically pump until the grout resin is seen coming out of the crack up to the next injection packer. Then repeat the injection process on the next injection port.

As the grout reacts with the moisture present, the grout will move "FOAM" in an upward direction. Depending on the width of the crack, the grout may travel up to several feet along the crack. Inject in a particular injection port until the grout is no longer traveling. After injecting into all the ports in sequence, immediately return to the first port and inject all ports again in sequence. Prior to the grout curing, each injection port may be pumped several times during the installation. Finally, water may be re-injected to insure reaction.

**Caution:** Properly mixed grout will expand 25-30 times its wet volume. Void filling capacity of AKWASEAL LV is 5-cubic feet of foam per gallon of liquid grout resin.

For cracks with a high flow rate or large void areas, it may be necessary to dam up the area with rags, oakum, or other material. Damming the area will decrease the rate of water flow to allow the grout resin time to foam and bond to the interior surfaces of the crack/joint.

When injection has been completed, injection ports should be removed or broken off with a hammer. Exposed cured grout foam should be scraped off and disposed of per all applicable regulations. Drill holes should be filled with proper patching material. Clean pump equipment and hoses with PUMP FLUSH. Do not flush out pump equipment or hoses with water.

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### PUMP EQUIPMENT

Portable airless pumps producing discharge pressures of >250 psi are recommended for use with AKWASEAL LV. Airless pumps with 1/3 gallon per minute pump capacity are ideal for small projects. Airless pumps with 1/2 to 1 gallon per minute pump capacity are better for large projects or projects with large rates of flowing water.

### SAFETY

ALWAYS WEAR PROTECTIVE EYE WEAR (FACE SHIELD RECOMMENDED) AND CLOTHING TO PROTECT EYES AND SKIN. Avoid contact with skin and eyes. If eye contact occurs, flush eyes with water thoroughly and seek medical attention. Avoid ingestion of material. If ingestion occurs, seek immediate medical attention. Industrial use only. Keep out of reach from children. Refer to Material Data Safety Sheet for additional safety and first aid information.

TECHNICAL DATA		
PROPERTY	TEST METHOD	TYPICAL VALUE
Shear Strength	ASTM C273	17.1 psi
Tensile Strength	ASTM D 1623	29.3 psi
Elongation	ASTM D1623	80%
Viscosity		220 cps
% Solids		100
Grout Color		Amber
Density	ASTM D1622	Free Rise 2.02 lbs./ft <sup>3</sup> Confined 4.04 lbs./ft <sup>3</sup>
Low Temperature (-20°F) Aging Shrinkage	ASTM D1622	<0.05% 1 Day <0.05% 7 Days
High Temperature (200°F) Aging Shrinkage	ASTM D1622	<0.05% 1 Day <0.05% 7 Days

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