



AQUASEAL EPOXY SYSTEM

UNDERWATER EPOXY COATING AND REPAIR SYSTEMS

EUCLID CHEMICAL

UNDERWATER

DESCRIPTION

The AQUASEAL family of products are two-part, 100% solids epoxy systems specifically designed for underwater applications on concrete or masonry surfaces. These products are suitable for applications in both fresh and saltwater. AQUASEAL MV is a high build protective coating for structures below water. AQUASEAL LV is a low viscosity version that can be mixed with aggregate to form a mortar for repair or can also be used "neat" for crack repair using pressure injection techniques.

PRIMARY APPLICATIONS

- Coating concrete, steel piers and piles
- Grouting and pointing of granite block
- Grouting pile jackets
- Anchor bolt grouting
- Underwater pressure injection

TECHNICAL INFORMATION

Material Properties @ 24°C (Values are typical and not necessarily referenced to create specifications).

	AQUASEAL MV	AQUASEAL LV	AQUASEAL GEL
Mixing Ratio A:B by volume	1:1	1:1	1:1
Viscosity A & B mixed, cps	5,000 to 7,000	1,000 to 1,500	Gel
Gel Time 100 grams	60 min	40 min	60 min
Pot Life 7.6 L unit	30 to 40 mins	15 to 30 mins	30 to 35 mins
Tensile Strength min MPa ASTM D 638			
7 Day	20.7	44.82	–
Tensile Elongation %	1 to 5	6 to 12	–
Compressive Strength MPa ASTM D 695			
7 Day	48.3 to 55.2	55.2 to 62.1	48.3 to 55.2
Compressive Mortar Strength MPa ASTM C 109			
7 Day	62.1 to 69.0	48.3 to 55.2	55.2 to 62.1
Parts sand, by volume	3	3	1
Shore D Hardness ASTM D 2240,	85 to 90	90 to 95	85 to 90
Flexural Strength MPa ASTM C 580 (3 parts sand)	15.2	20.7	–
Tensile Strength MPa ASTM C 307 (3 parts sand)	–	8.6	–

Appearance: AQUASEAL epoxies are manufactured in light gray. Special colors are available subject to minimum quantities.

PACKAGING

AQUASEAL LV, MV & GEL are packaged in 37.9 L units and 3.8 L/case.

SHELF LIFE

2 years in original, unopened bag

SPECIFICATIONS / COMPLIANCES

AQUASEAL LV: ASTM C 881, Type III, Grade 1, Class C

AQUASEAL MV: ASTM C 881, Type IV, Grade 2, Class C

AQUASEAL GEL: ASTM C 881, Type IV, Grade 3, Class C

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MASTER FORMAT #:
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COVERAGE

m ² /L	AQUASEAL MV	AQUASEAL LV	AQUASEAL GEL
bond coat	2.45	3.68	2.45
1st coat	1.23	–	–
2nd coat	1.84	–	–
Epoxy:Aggregate (by vol)	–	1:3	1:1
Epoxy:Aggregate per .028 m ³	–	10.2 L : 3.6 kg	17.8 L : 2.1 kg

Note: AQUASEAL product coverage rates are approximate and for estimating purposes only.

DIRECTIONS FOR USE

Surface Preparation: Surface must be structurally sound, and clean of laitance, dirt, marine growth, scale, oil, coatings and other contaminants. All surfaces should be sandblasted, water-blasted or mechanically abraded to remove all contaminants and provide a roughened, structurally sound substrate. Application of the appropriate AQUASEAL product should begin promptly to avoid re-contamination of the surface.

Mixing: The AQUASEAL products should be conditioned to 24°C for 24 hours prior to mixing above water. Premix Part A (Base) and Part B (Hardener) individually. Then combine Part A and Part B 1:1 by volume in a clean container. Mix thoroughly with a slow speed motor and “Jiffy” Mixer. Make sure to scrape the sides and bottom of the mixing container. Do not aerate the mix.

Mortar: AQUASEAL LV and AQUASEAL GEL can be mixed with clean, dry silica aggregate to make a mortar. Gradually add an appropriate aggregate to the mixed binder and blend thoroughly. **Mix Ratios for Mortar:** Mixed binder to aggregate (by volume). AQUASEAL LV 1:3 and AQUASEAL GEL 1:1 maximum. (May be varied depending upon desired consistency).

Application: The AQUASEAL products should be applied at water and surface temperatures of at least 13°C and rising. The mixed AQUASEAL system should be transported underwater after mixing. Agitation while underwater must be minimized.

Coating: Apply a thin coat of AQUASEAL MV as a primer, by brush or gloved hand working and scrubbing the coating into the pores of the substrate in order to displace the water. Follow with a regular heavy coat of AQUASEAL MV, applied by gloved hand, brush or roller.

Grouting/Patching: Horizontal: Prime by scrubbing the surface with neat AQUASEAL LV in order to displace the water. Place the prepared AQUASEAL LV mortar by pouring from the bottom and one side and finish with a trowel. The material’s density should displace the water. **Pile Jacket Grouting:** Pump or pour the prepared AQUASEAL LV mortar, starting at the bottom of the jacket and work up. The density of the material should displace the water from the jacket. **Vertical and Overhead:** Prime the surface by scrubbing or working the surface with neat AQUASEAL GEL. Apply by pressing the AQUASEAL GEL; neat or mixed with aggregate, firmly on the substrate with gloved hand or trowel so as to displace the water. Build up the material to the desired thickness. For deep patching, the repairs should be made in lifts of no more than 2.5 cm at a time, allowing each lift to achieve an initial set prior to applying the next lift. **Anchor Bolt Grouting:** Before grouting, ensure that the anchor hole is free of all debris and foreign objects. **Vertical Anchor Bolt Holes:** Place the anchor bolt into the hole and pour the neat AQUASEAL LV around the bolt allowing the air to vent before filling completely. **Horizontal Anchor Bolt Holes:** Prime by scrubbing the anchor bolt hole with neat AQUASEAL GEL. Fill approximately half the hole with the gel, and push the anchor bolt into the hole, twisting the bolt to make sure full contact is made. Pack the hole with additional gel to finish flush with the substrate.

CLEAN UP

Clean tools and application equipment immediately after use with methyl ethyl ketone or acetone. Clean spills and drips while still wet with solvent. Dried AQUASEAL will require mechanical abrasion for removal.

PRECAUTIONS / LIMITATIONS

- Do not thin or dilute AQUASEAL materials.
- Do not mix and apply below 13°C.
- Store between 10°C to 32°C.
- Use only clean oven-dry aggregates.
- AQUASEAL is not designed to resist hydrostatic pressure from the negative side.
- Agitation of the product once under water must be kept to a minimum.
- Due to the many variables which can exist under water, a test application under jobsite conditions is recommended prior to the start of every project to evaluate both application techniques and adhesion after cure.
- In all cases, consult the Safety Data Sheet before use.

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