



# TECHNICAL DATA SHEET

## AQUASEAL®, AQUASEAL® GEL, AQUASEAL® LV Underwater Epoxy Coating and Patching Systems

03930

CONCRETE REHABILITATION  
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TAMMS INDUSTRIES  
MARCH 2002 (Replaces 1/01)

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- 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:** 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 grout for patching and repair or can be used "neat" for crack repair using pressure injection techniques.  
**AQUASEAL GEL:** Can be used neat or with an aggregate for patching and grouting of underwater vertical surfaces.
- USES:** The AQUASEAL products are used for coating concrete and steel piers and piles, grouting pile jackets, underwater pressure injection, grouting and tuckpointing of granite block, and anchor bolt grouting.
- COMPOSITION AND MATERIALS:** The AQUASEAL products are 100% solids epoxy systems.

Material Properties at 75°F

	AQUASEAL	AQUASEAL LV	AQUASEAL GEL
Mixing Ratio: A:B by volume	1:1	1:1	1:1
Viscosity: A&B mixed, cps	5,000-7,000	1,000-1,500	Gel
Gel Time, 100 grams	60 min	40 min	60 min
Pot Life (2 gal unit)	30-40 mins.	15-30 mins.	30-35 mins.
<b>ASTM D638, 7 Day</b>			
Tensile Strength, minimum PSI	3,000	6,500	-
Tensile Elongation, Pct	1-5	6-12	-
<b>ASTM D695, 7 Day</b>			
Compressive Strength, PSI	7,000-8,000	8,000-9,000	7,000-8,000
<b>ASTM C109, 7 Day</b>			
Compressive Mortar Strength, PSI	9,000-10,000	7,000-8,000	8,000-9,000
Parts sand, by volume	3	3	1
<b>ASTM D2240, Shore D</b>			
Hardness	85-90	90-95	85-90
<b>ASTM C580 (3 parts sand)</b>			
Flexural Strength, PSI	2,200	3,000	-
<b>ASTM C307 (3 parts sand)</b>			
Tensile Strength PSI	-	1,250	-
Values are typical and not necessarily referenced to create specifications.			

- COLORS:** AQUASEAL LV, AQUASEAL and AQUASEAL GEL are available in light gray. Special colors are available subject to minimum quantities.

- 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 INSTRUCTIONS:** The AQUASEAL products should be conditioned to 75°F 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 Grout:** AQUASEAL LV and AQUASEAL GEL can be mixed with clean, dry silica aggregate to make a mortar grout. Gradually add an appropriate aggregate to the mixed binder and blend thoroughly.  
**Mix Ratios for Mortar:**  
Mixed Binder: Aggregate (by volume).  
AQUASEAL LV 1:3  
AQUASEAL GEL 1:1 Max.  
May be varied depending upon desired consistency.

- APPLICATION TECHNIQUES:** The AQUASEAL products should be applied at water and surface temperatures of at least 55° 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 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, applied by gloved hand, brush or roller.  
**Grouting/Patching: A) 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. **B) 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. **C) 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 1 inch 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. **A)**

**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. **B)**

**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.

8. **COVERAGE:** AQUASEAL product coverage rates are approximate and for estimating purposes only. Surface temperature, porosity and texture will determine actual material requirements.

	AQUASEAL	AQUASEAL LV	AQUASEAL GEL
Scrub Coat	100 sq.ft/gal	150 sq.ft/gal	100 sq.ft/gal
1st Coat	50 sq.ft/gal	-	-
2nd Coat	75 sq.ft/gal	-	-
Resin:Aggr (by vol)	-	1:3	1:1
Approx. gals. to make 1 cu.ft.	-	2.7:8.0	4.7:4.7

9. **CLEAN-UP INSTRUCTIONS:** Clean tools and application equipment immediately after use with methyl ethyl ketone or xylene. Clean spills and drips while still wet with solvent. Dried AQUASEAL will require mechanical abrasion for removal.

10. **PACKAGING:** 4 gallon cases, and 10 gallon units.

**Storage:** 50-90°F.

**Shelf Life:** 2 years in protected storage.

**Freight Class:** Class 60.

11. **CAUTIONS:** Do not thin or dilute AQUASEAL materials. Do not mix and apply below 55°F. 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.

12. **ENVIRONMENTAL AND SAFETY PRECAUTIONS: Industrial Use Only. Component "A":**

Contains epoxy resin. Vapors can cause respiratory irritation. Skin and eye irritant. Can cause sensitization after prolonged or repeated exposure. Use of safety goggles and chemical resistant gloves is recommended. Use only with adequate ventilation. **Component "B": Is CORROSIVE.** Contains amines. Contact with eyes or skin may cause severe burns. Can cause sensitization after prolonged or repeated use. Use of safety goggles and chemical resistant gloves is highly recommended. Use only with adequate ventilation. **First Aid:** In case of skin contact, wash immediately and thoroughly with soap and water. For eye contact, flush immediately with plenty of water for at least 15 minutes. Consult physician immediately. For respiratory problems, remove person to fresh air. **Disposal:** Collect with absorbent mate-

rial. Dispose of in accordance with current local, state and federal regulations. READ MATERIAL SAFETY DATA SHEET BEFORE USING. FOR INDUSTRIAL USE ONLY. **KEEP AWAY FROM CHILDREN AND ANIMALS.** EMERGENCY RESPONSE PHONE NUMBER: (800) 862-2667 TAMMS OR (800) 424-9300 CHEMTREC.

13. **TECHNICAL SERVICE:** For application procedures or surface conditions not specified above, please contact:

TAMMS INDUSTRIES  
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800-862-2667 FAX: 815-522-2323  
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