



# PileMedic™ UW Grout

## Description

PileMedic™ UW Grout is a pumpable underwater cement-based non-shrink grout for use in underwater repair such as pile restoration. PileMedic™ UW Grout is designed for underwater use in tidal zones in applications requiring a non-shrink, non-metallic, wash out resistant grout in thickness from ½" up to several inches. PileMedic™ UW Grout is specially formulated for minimal wash-out and is salt-water resistant.

## Uses

- Recommended for underwater grouting of bridge columns, concrete pilings, and dam repairs where a "wash-out" resistant, free flowing or pumpable non-shrink grout is required.
- Use for encapsulation repair and restoration for concrete, timber, and steel in dry and wet environments.

## Features/Benefits

- "Wash-out" resistant thixotropic consistency for dependable Underwater repairs (displaces water).
- Free-flowing or pumpable consistency for easy application.
- High early and ultimate strength for fast repair and turn around without chlorides.
- Positive expansion for maximum durability and adhesion.
- Convenient 2:1 mix ratio by volume for liquid; adjustable aggregate loading.
- Excellent corrosion protection.

## Specifications/Compliances

- Corp of Engineers Specifications: CRD-C 621
- ASTM C 1107
- USDA Accepted

## Packaging/Yield

1 ft<sup>3</sup> Yield:

- Component A – (2) Premeasured 55 lb Bags
- Component B – 1-Gallon Jug
- Component C – (2) 55 lb Bags Aggregate

## Surface Preparation

Substrate must be clean and sound. All loose material must be removed. Substrates which are permanently immersed should be sandblasted or cleaned with a high-pressure water jet. Non-immersed or intermittently immersed substrates can also be prepared using these techniques. Depending on the circumstances, scabbling or brush hammering may be appropriate. All metal surfaces to contact the grout should be sandblasted to a white metal finish. In view of the flowable nature of PileMedic™ UW Grout, all form work must be grout-tight. This can be achieved using foam rubber sealing strips at the edges.

## Technical Data

Shelf Life	2 years in original unopened container
Storage Conditions	40°F-95°F (5°C-35°C)
Material Conditions Prior to Use	65°F-85°F (18°C-29°C)
Liquid Mix Ratio	2:1 by volume
Viscosity	100-500 cps
Gel Time (200g mass)	120 minutes
Tack Free Time (73°F or 23°C)	12 to 24 hours
Tensile Strength (ASTM C 307) Wet:	1,500 psi (10.3 MPa)
7-Day Cure Dry:	2,500 psi (17.2 MPa)
Bond Strength (ASTM C 882) Wet:	1,800 psi (12.4 MPa)
7-Day Cure Dry:	3,000 psi (20.7 MPa)
Compressive Strength (ASTM C 882) 7-Day Cure Wet:	6,000 psi (41.4 MPa)
Dry:	11,000 psi (75.9 MPa)
Tensile Bond Strength (ASTM C 1583), 7-Day Cure	>250 psi
Thermal Compatibility (ASTM C884)	Pass
Linear Shrinkage (ASTM C531)	0.01%
Water Absorption (ASTM D570)	0.3% (24hr)

*Note: the data shown is based on controlled laboratory testing. Reasonable variation from test results shown can be expected. Field and laboratory testing should be controlled on the basis of the desired placing consistency, rather than strictly on water content.*

## Mixing

Mix only the amount of material that can be used within its pot life. Proportion each component carefully into a clean pail. Mix thoroughly for 3 minutes with a Jiffy mixer on low speed (400-600 rpm). Scrape the sides and bottom of the container. To prepare an epoxy grout, slowly add the aggregate. Mix only until all aggregate is wetted out. Place the grout either by pouring or pumping.

## The Infrastructure Innovators

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## Application

Pilemedic™ UW Grout can be dry packed, poured, or pumped into place. Place the grout within 20 minutes of mixing to gain the full benefit of the expansion process. Continuous grout flow is required and the grout should be poured or pumped through a flexible tube, minimum diameter of ½" to the lowest point in the form. At the start of operation, the grout flow should be restricted in order to avoid any water entrapment. The bottom of the tube may be raised above the level of the grout. A 6" minimum depth is suggested below the grout surface to optimize performance. (tremie method).

Pile Jackets may be filled with Pilemedic™ UW Grout in thicknesses up to 4" in one pour when placed above water. When placed under water, the heat sink effect in the environment permits thickness up to 7" be placed. For thicker sections, up to 10" above water and 20" under water, it is necessary to extend the Pilemedic™ UW Grout using a clean, rounded and well graded aggregate in the size range 3/8" to ½". The quantity of aggregate should not exceed 1-part aggregate to 1 Pilemedic™ UW Grout by weight. For such mixes, a mortar mixer should be used. Unrestrained surface areas should be kept to a minimum. Excessively large volumes would require a thermal analysis to determine any limitations on pour size.

Curing will not be required in intermittent or totally submerged conditions. However, when cast above water, cover immediately with clean wet rags and keep moist until final set. After final set, remove rags and apply a ASTM C-309-91 curing compound.

## Shelf Life & Storage

Pilemedic™ UW Grout should be stored in a cool, dry interior area. At no time should stored material be exposed to high moisture, rain, or snow conditions. When stored in the original tightly closed container, the shelf life is two years from the date of manufacture.

## Limitations

PileMedic™ UW Grout is a fast setting product, so mixing equipment should be cleaned with water as soon as possible.

Do not allow repairs to freeze until the material has reached a minimum of 1000 psi compressive strength. In adverse temperatures, follow ACU recommendations for hot/cold weather concreting practices. We only use potable water for mixing.

Minimum surface and ambient temperature of 45°F and rising is required at the time of application. For optimum results, condition material to between 65°F and 85°F.

Avoid hazards by following all precautions found in the Safety Data Sheet (SDS) product labels.

## Cleanup

Collect with absorbent material, flush with water. Dispose waste in accordance with local disposal regulation. Uncured materials can be removed with approved solvent. Cured materials can only be removed mechanically.

## First Aid

Appropriate personal protective equipment (PPE) should be worn at all times when handling this product. Consult SDS for more information.

## Certificate of Compliance

Safety Data Sheet (SDS) will be supplied upon request and is included with each shipment.

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