

K A U F M A N

PRODUCT
INFORMATION

KAUFMAN
PRODUCTS
INC.

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SureGrout UW AE

Description

SureGrout UW AE is a structural grouting and concrete compound designed for underwater placement. SureGrout UW AE is air-entrained, contains a migrating corrosion inhibiting agent, and an anti-washout additive for marine applications. SureGrout UW AE requires only the addition of water to produce a pumpable underwater air-entrained non-shrink grout, or when extended with aggregate, produces an underwater, air-entrained concrete mix.

SureGrout UW AE is composed of special portland cements, washed and properly graded quartz aggregates, an amine-based corrosion inhibiting agent to help prevent corrosion, an air-entraining admixture, plus other proprietary ingredients to allow the product to set underwater without excessive expansion or shrinkage.

Uses

SureGrout UW AE is recommended for grouting to repair deteriorated underwater or tidal zone concrete structures without significant "wash-out" of the cement. Can also be used as patching or pointing cement for joints over 1/4" wide. Applications include bridge columns, concrete piling and dams. SureGrout UW AE is particularly effective when used with metal or fiberglass jackets around pilings to fill the annular space completely.

SureGrout UW AE may also be extended with washed and dried 3/8" pea gravel to produce an underwater concrete.

Features

Non-Raveling	Non-Metallic
Corrosion Inhibiting Agent	Pumpable
Non-Rusting	Economical
Non-Corrosive	Non-Staining
Precision Blended Grade	Marine
Non-Bleeding	Air Entrained

Packaging

50 lb. moisture resistant bags yielding .45 ft³
3,000 lb. super sacks yielding 1 yd³

Compliances

ASTM C-109	CRD	C-227
C-157		C-621
C-827		C-61
C-1107		

Shelf Life

One year in original,
unopened 50 lb. bags.

Working Time at 72°F

30 minutes

Set Time (ASTM C-191)

Initial 3-4 hours

Final 5-6 hours

Compressive Strength (ASTM C-109)

1 Day	4,500 psi.
7 Days	8,000 psi.
28 Days	8,500 psi.

Compressive Strength, 4 x 8 Cylinders (ASTM C-39)

1 Day	5,000 psi.
3 Days	7,500 psi.
7 Days	8,500 psi.
14 Days	9,000 psi.

Height Change Moist Cured (ASTM C-1090)

28 Days +0.03%

Early Age Height Change (ASTM C-827)

Maximum 4% Allowed +0.10%

Slant Shear Bond Strength, (ASTM C-882)

28 Days 2,500 psi.

Splitting Tensile Strength (ASTM C-496)

28 Days 500-600 psi.

Length Change (ASTM C-157)

In Air at 28 Days	-0.14%
In Water at 28 Days	+0.04%

Freeze Thaw Resistance (ASTM C-666

Procedure A)

Relative Dynamic Modulus 96.8%

Modulus of Elasticity

5,200,000 psi.

(ASTM C-469)

Directions

Surface Preparation

Substrate must be clean and sound and free of foreign matter. All loose and unstable material must be removed. Substrates should be sand blasted or cleaned with high-pressure water jet according to ASTM D-4258, D-4259. Depending on the circumstances, scrubbing or bush hammering may be appropriate.

Underwater Grout Mixing Procedure

Mix 3.5 quarts water with each 50 lb. bag. A mechanically powered grout mixer must be used. Ensure that the machine and number of workers are adequate to properly carry out the grouting in a continuous manner. Add the powder to the water, in the mixer, and mix for 4- 5 minutes, making sure that a smooth, even mix is obtained.

Start by adding 90% of the mix water to the mixer, and then add the full amount of SureGrout UW AE. Add the remaining mix water to attain the desired flow characteristics.

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Placing

SureGrout UW AE, when mixed as an underwater grout, may be tremied or pumped depending upon jobsite conditions. Use the mixed grout within 30 minutes.

Pumping Applications: Pump properly mixed SureGrout UW AE through a port established at the bottom of the form. Fill the annular space to the desired level, allowing the water to be displaced. Make certain to check for prior to pumping.

Tremie Applications: Make certain the hose is positioned all the way at the bottom of the form. Fill the space to the desired level, allowing water to be displaced out the top of the form.

Depending upon jobsite conditions and placement depths, the tremie hose may need to be retracted as the form fills to maintain proper flow characteristics. Do not raise the hose higher than the level of SureGrout UW AE. At the start of the operation, the grout flow should be restricted in order to avoid any water entrapment. Do not place SureGrout UW AE in water temperatures below 40°F, or when the temperature is expected to drop below that during the first 24 hours after placement. Water temperatures should not exceed 90°F during placement.

The minimum application thickness is 1" neat, and 2" when extended. Maximum application thickness is 8" when extended.

When placed in the annular space between a pile jacket and piling, SureGrout UW AE may be placed neat and in lifts of up to twenty feet.

Underwater Concrete Mix Procedure

SureGrout UW AE may be extended with 3/8" pea gravel up to 50% by weight to produce an underwater, air-entrained concrete mix. Aggregate must be clean, non-reactive, well-graded, have low absorption and high density in compliance with ASTM C-1260, C-227, and C-289. When extended, the aggregate and mix water should be mixed together for 3-5 minutes, prior to adding SureGrout AE. Please read the technical document called Susceptibility of Kaufman Products to Alkali-Silica Reaction (ASR) Overview.

Curing

Normally not required when intermittently or totally submerged. However, when cast above water, all exposed surfaces should be thoroughly cured using a product that meets all aspects of ASTM C-309, Type 2, Class B, such as Thinfilm 450.

Hoses

Heavy duty grout hoses with an abrasion resistant lining should be used. Hoses should be equipped with internally expanded ends and quick disconnect fittings that eliminate pressure build-up. Hoses must have an internal diameter of a minimum of 1".

Notes

Rate of strength gain is significantly affected by both air and surface temperatures. Keep exposed grout protected from temperatures below 40°F until a minimum compressive strength of 4,000 psi. is achieved. *Read the complete Safety Data Sheet prior to use.* Only certified & experienced diving contractors should attempt placement of SureGrout UW.

Do not ever add plasticizers, accelerators, retarders, or any other ingredients besides potable water unless advised by Kaufman Products in writing. Do not re-temper. Mix water must be potable. For best results, condition SureGrout UW AE to 70°F.

Pumping

SureGrout UW AE grout mix can be pumped successfully using a ChemGrout CG-030 Series, or similar brand.

Specifications

All grouting shall be done with SureGrout UW AE as manufactured by Kaufman Products, Inc. Baltimore, Maryland. The grout shall be mixed according to directions furnished by the manufacturer and installed in accordance with their directions. Perform all grouting work in accordance with the recommendations of the American Concrete Institute for mixing and placement of concrete.

Technical Information

Test results were achieved under laboratory conditions. Statistical variations will occur based upon mixing methods, temperature & humidity,

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test methodology, site conditions, curing
conditions, application methods, and equipment.

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