

K A U F M A N

PRODUCT
INFORMATION

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RECOMMENDED FIELD PROCEDURES FOR THE SUREGROUT SERIES

Preparation

1. The base slab on which the grout is to be placed should be clean and soaked with clean water to produce a saturated surface dry condition. Just prior to grouting, the water should be removed and the surface dried with clean rags or compressed air (compressor must have a filter installed to prevent oil from being deposited on the clean slab). Leave only a damp film.
2. All grout contact surfaces including but not limited to anchor bolts, base plates, sole plates and forms should have all penetrating sealers, curing compounds, scale, grease, oil and any other contaminants removed from surfaces which will come in contact with the grout.
3. Base plates and sole plates should be shimmed and brought into proper alignment prior to placement of the grout.
4. The surface to be grouted should be roughened to CSP 5-9 according to ICRI Guideline 03732 to create a proper bond.
5. Air relief holes should be drilled through the plate to allow escape of trapped air, or special placement procedures may be required. Contact your Kaufman Products representative for further information.
6. Have all necessary tools and materials as near work area as possible to permit rapid and continuous placement of grout. For accurate mixing to the desired consistency, a marked water pail is recommended.
7. Sufficient personnel should be available to insure a continuous flow of grouting material.
8. To ensure grouting without interruption, it is good practice to have two mortar mixers, preferably gasoline powered.
9. Mix grout as close as possible to the area being grouted.

Forms

1. A watertight form should be sturdily built around the area to be grouted free of oil and grease.
2. All form work should be designed so that it does not but directly against the base plate; that is, allow a border of approximately an inch or so around all sides. The top of the form should be level with the top of the plate.
3. Anchor all forms securely to prevent movement during placing or curing.

4. Banding straps placed inside and extending from the sides of the forms beforehand will assist in compacting the grout and eliminating air pockets.
5. At the point where the grout will be introduced into the form, a head box should be mounted approximately 6-8" higher than the base plate, to allow for proper gravity flow filling of the formed area.

Temperatures

Cold Weather Grouting

Because grouts set up slower in cold weather, maintain temperatures of 60-75°F of both the grout and all concrete, forms, and steel in contact with the grout prior to, during and for at least 48 hours after placing. Follow ACI Guidelines for Cold Weather Concreting # 306. When grouting in cold weather cannot be avoided, modify the basic procedures as follows:

1. Store the grout bags in a warm building for 24 to 48 hours prior to grouting.
2. Heat the mixing water to 80-95°F. (Temperatures greater than 95°F could cause the grout to flash set, and lower than 80°F will have virtually no effect on raising the grout temperature.) The temperature of the grout at the time of placement should be at least 50°F and no higher than 80°F.
3. Where practical, warm the base plate areas and mixing equipment for the first batch of grout.
4. The use of Excell NC 80 is highly recommended for use in temperatures below 50°F.

Hot Weather Grouting

In hot weather (85-100°F), grouts may lose workability rapidly, causing flash setting and loss of compressive strength. To overcome these problems, modify the basic procedures as follows, and follow ACI guidelines for Hot Weather Concreting # 305:

1. Store grout bags in a cool, shaded preferably indoor location until time of use).
2. Use chilled mixing water as close to 33°F as possible. This can be easily accomplished by placing a block of ice in a 55 gallon Drum of water. At time of placement, grout temperatures should be approximately 80°F, or below.
3. Be sure areas to be grouted have been thoroughly saturated with cool water for 18 to 24 hours prior to grouting. Just prior to placing the grout, remove standing water with an air hose or mop with clean rags.
4. Locate mortar mixer in a shaded area as close to the grouting site as possible. Prior to mixing, cool mixer with the chilled water.

- As soon as possible, apply VaporAid or VaporAid RTU, soaked burlap or polyethylene, to inhibit evaporation of moisture due to high ambient temperatures. Delay application of either Thinfilm or Krystal Series curing compounds to 24 hours after final set.

Mix Ratios for SureGrout

<u>ASTM Designation</u>	<u>Quarts</u>
Dry-Pack	2.7 plus 25# Pea Gravel
Plastic	3.65
Flowable	4.0
Fluid	4.5

Mix Ratios for SureGrout 106

<u>ASTM Designation</u>	<u>Quarts</u>
Normal (NY DOT 701-05)	2.75
Flowable (NY DOT 701-06)	3.09

Mix Ratios for SureGrout 5000

<u>ASTM Designation</u>	<u>Quarts</u>
Plastic	2.65
Flowable	2.90
Fluid	3.75

- Prior to mixing the first batch of grout, wash out mixer and determine the number of bags to be mixed at one time. Mix only the amount of grout that can be placed in 15 to 20 minutes.
- Put into the mixer about 2/3 of the required water for the consistency desired and then add the grout slowly into the operating mixer (being careful not to overload to the point of stalling). Never mix by hand.
- Mix the grout to a doughy state. Mix until all dry material is thoroughly wet. After all lumps have disappeared, add the remaining water to achieve the desired consistency. Continue to mix for 3 to 5 minutes. The grout will stiffen after a few minutes.
- Maximum flow for these SureGrout Series products, as measured by flow cone (under CRD-C-79), should be 20 to 30 seconds. Place grout immediately after mixing. Do not mix more grout than can be placed in 10 minutes.
- Do not ever add plasticizers, accelerators, retarders, or any other ingredients besides potable water unless advised by Kaufman Products in writing.

Grout with Aggregate Addition

For grouting depths of 3" or less, use either product as packaged. For depths of more than 3" but less than 5", 3/8" aggregate should be added to these SureGrout Series products at 25% by weight. For depths greater than 5" increase 3/8" pea gravel to 50% by weight. The addition of this aggregate as specified below does not substantially affect the performance of these SureGrout Series products. Follow basic procedures as above, with modifications as follows:

- Choose a clean (free of organic material), non-reactive, saturated surface dry, low absorption and high density, well graded 3/8" aggregate that meets the requirements of ASTM C-33.
- When adding the initial 2/3 of the required water into the mixer, take into consideration any moisture that might be contributed by the 3/8" aggregate itself.
- When the dry material is wet and all the lumps have disappeared, slowly add approximately 27# of 3/8" aggregate for every 1/2 cubic foot of grout.
- Continue to mix until the pea gravel is thoroughly dispersed throughout the grout, approximately 3 to 5 minutes.
- Add the remaining water to achieve the desired consistency. Note that the addition of aggregate as specified does not substantially change the consistency of SureGrout.

For depths greater than 10" contact Kaufman.

Placement

- Whenever possible, grout bolt holes first to prevent water from being trapped in them and from rising after grouting is completed to form voids under the item being supported.
- Placement and compaction of grout should be continuous until completed. Grout should be placed from one side only to avoid excessive air pockets and assure good compaction.
- Straps should be worked back and forth in slow, short strokes and removed before initial set occurs. Do not overwork grout as this may cause segregation, bleeding, and breakdown of initial set.
- If vibrating machines or equipment is being used nearby, shut them down until grout takes final set. Under no circumstances should grout be re-tempered. Never vibrate in placing. Do not put vibrating equipment into use, near grout until grout has reached sufficient strength to be unimpaired.
- The minimum placement thickness is 1" for SureGrout, SureGrout 106, or SureGrout 5000.

Pumping Grout

Do not use more than 4.5 quarts of water per bag of SureGrout, more than 3.09 quarts of water per bag of SureGrout 106, or more than 3.75 quarts of water with SureGrout 5000. ChemGrout, Inc. CG 550P or larger cavity grout pumps are excellent for pumping this material. Other suitable pumping machines will also work.

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".

Curing

Never allow the temperature of the grout to be subjected to temperatures below 40°F during the first two days. Exposed edges of do not require cutting back, or any other type of special treatment. SureGrout products should be wet cured for a minimum of 72 hours or should be wet cured for 24 hours followed by the application of a high quality curing compound that meets ASTM C-309, such as any Thinfilm or Krystal Series products.

Precautions

Never use SureGrout, SureGrout 106, or SureGrout 5000 as a repair mortar, overlay, or in an unconfined space, however form & pour applications are acceptable. Avoid contact with aluminum by coating aluminum surfaces with SurePoxxy HiBild. This technical document only applies to SureGrout, SureGrout 106, and SureGrout 5000, and does not apply to any other SureGrout Series product. When using any SureGrout Series product for DOT work, all specifications of that state must be followed.

Notes

A Kaufman Products' representative is available to all specifiers and users of Kaufman Products, at no charge. Notify the Kaufman Products office in advance for job site service. Proper application is the responsibility of the end-user, and field visits are for technical recommendations only and not for supervision. Be sure to use the material within one year of manufacture. Make certain that the most recent versions of the product information and *Recommended Field Procedures* are used; Call customer service at (800) 637-6372 to get the most current version. Read Safety Data Sheet before using. Follow the American Concrete Institute 305 and 306 Manuals for Hot and Cold Weather Concreting.