UNISORB®
INSTALLATION SOLUTIONS

GB-0163-2

V-1 PREMIUM NON-SHRINK GROUT & PEA STONE

Please refer to Unisorb Product Data Bulletin 0136-1.1 Rev 1 for proper stone size (3/8"), mixing ratio and approximate yield of one bag and 25# of pea stone, and "Unisorb Premium Non-Shrink Grout Application Instructions" for additional details.

Product Storage

The unmixed grout components, (bags of V-1 Grout, pea stone, and water), should be stored appropriately so that components are pre-conditioned to temperatures between 70 and 80 degrees for optimum performance. Normal summer and winter concrete placement procedures should be observed during periods of high or low temperatures.

Preparing Cores or Pockets

Anchor bolt pockets MUST be properly prepared for the fresh grout. If not core drilled, Inner pocket surfaces should be roughed-up to remove laitance and to expose sound aggregate. Once inner surfaces are properly roughed, clean the pockets mechanically (with brushes and clean water) to remove all debris, dust, dirt and slurry films. Protect the roughed and cleaned pockets from accumulating additional dirt, dust, debris, etc. if not starting the pocket pre-soaking immediately. Don't' let the prepared pockets sit unprotected over time or they will need to be re-cleaned.

Presoaking Cores and Pockets

Proper pre-soaking with potable water is mandatory. When preparing to place grout, all pockets MUST be thoroughly pre-soaked for a minimum of 24 hours. A common mistake is to only pre-soak overnight. ***Pre-soaking is critical to a successful grout process and a 24-hour minimum is extremely important.*** Pre-soaking saturates the inner pocket surfaces so they do not "pull" or "draw" needed water from the fresh grout.

Immediately before mixing and placing fresh grout, evacuate all the water from the anchor pockets with a shop vacuum. Pocket condition MUST be "saturated, surface dry" … meaning, no standing water in the pockets.

Water for Grout Mixing

Another typical mistake occurs during the measurement of water. ***Water MUST be measured accurately, or the grout can be compromised.*** Too much or too little water is a common problem in grouting applications. Use a calibrated Unisorb Measuring Container to assure water volume accuracy. An accurate "Water-to-Grout" ratio is critical. If multiple bags of grout are being mixed, calibrate a clean 5-gallon water bucket. Fill the bucket with the proper amount of water and mark the side of the bucket at the calibrated level with a marking pen. Drill holes at this level so water levels can never exceed the targeted amount. If mixing one bag at a time, use the Unisorb Measuring Container.

Water MUST be clean and potable. No dirty water – no exceptions.

Never exceed Unisorb guidelines for water volume. A good starting point when considering the water to grout ratio is 1 gallon (4 quarts) of water to one bag of grout. The amount of water can be decreased if the product is too fluid or slightly increased if too stiff.

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Pea Stone

Use 24 to 25 pounds of 3/8" cleaned and rinsed pea stone for one bag of Unisorb V-1 grout. 3/8" pea stone can be sourced locally to cut down on shipping costs. All large hardware stores and contractor supply companies should have an ample supply of pre-packaged 50# bags of pea stone. Using bulk pea stone is also acceptable but the stone must be properly cleaned, rinsed and weighed before mixing. Calibrate a 5-gallon bucket for 24 to 25 pounds of pea stone if using bulk material.
If desired, Unisorb can provide pre-packaged pea stone in 50# bags.

Prepare and condition the 3/8" pea stone prior to use. The pea stone MUST be clean from grit and dirt, and properly rinsed. DO NOT use dry or dirty pea stone. ALL pea stone MUST be cleaned and washed. This applies to pre-packaged pea stone that states on the bag that it is washed. Our experience is that even the pre-washed, pre-packaged pea stone is dirty.

An easy way to clean and rinse the pea stone in pre-packaged 50# bags is to poke "holes" in the bag throughout the sides and bottom with a screw driver. Open the top of the bag enough to insert a water hose and rinse until clean water has flowed out of the perforations for one minute. Inspect the pea stone to make sure it is clean before using. Repeat the process if necessary. If buying in bulk, thoroughly perforate the sides and bottom of a 5-gallon bucket and use a similar cleaning and rinsing process.

Mixing (one bag at a time)

Use a clean 5 or 6-gallon bucket. Buckets can be reused once you have started but use a hand trowel to clean-out any dry spots or clumps between uses. 6-gallon buckets offer a little more space when mixing and may be preferable. If desired, 6-gallon buckets can be purchased from Unisorb.

Use a high torque, low RPM drill (600 RPM or less). Drill MUST be heavy-duty.

Mixing paddles should be a helical blade type or daisy wheel type (no drywall blade type). Daisy wheel paddles can be purchased directly from Unisorb.

Do not start the mixing process by using all the premeasured water when mixing to a "flowable" or "fluid" consistency. At these water levels, start the mixing process by holding back a portion of the water. Starting the mixing process with less than the full pre-measured amount will help blend the materials more efficiently and faster while creating fewer "lumps", therefore we recommend the following procedure:

Place 2/3 of the pre-measured water into the mixing bucket.
Gradually add one bag of V-1 Grout to the water while mixing.
If the mixture is too stiff to mix, add a little more of the held back water but not all.
Mix the water and grout for three minutes. Add 24 to 25 pounds of the washed and rinsed pea stone and mix until all the pea stone has been thoroughly "wetted' by the grout.
Add the held back water as needed to reach the desired consistency.

NOTE: Rinsed pea stone WILL retain some water. Therefore, when using V-1 with washed and rinsed pea stone, you may not use the entire pre-measured water. It is OK to use a little less water than the volume you pre-measured. Evaluate the consistency and use the held-back amount as needed.

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Mixing (with a mortar mixer)
Use of a multiple bag mixing approach is acceptable. The mixer used should be in good physical condition and capable of thoroughly mixing all the ingredients. ***The quality of the mix is critically important.*** Calibrate water buckets for the amount of grout being mixed in each mixing cycle. Accurate water measurement is critical. Hold back 1/3 of the measured water as previously detailed. When ready to mix: Place 2/3 of the measured water first. Add grout gradually while mixing until all grout has been added. Once all grout has been placed into the mixer, mix thoroughly (minimum three minutes). Add the washed and rinsed pea stone and continue mixing until the stone is thoroughly wetted and distributed in the grout. Add the remainder of the held-back water as needed to reach the desired consistency. Clean lumps and unmixed product from the mixer between cycles.

Placement
Place the grout quickly. DO NOT over-trowel or finish the freshly placed grout. Strike off the grout to the level needed and move on. Over-working will bring excessive water to the surface and dilute the fresh grout. This can later cause excessive cracking and flaking.

Post Curing
Once the fresh grout has cured (hardened) to a condition where it can support wet rags, place wet rags on all exposed grout surfaces. Keep the rags continually wet; DO NOT let them dry out. This will prevent excessive cracking. ***Keep the wet rags on the fresh grout for a minimum of 3 days; 7 days is preferable.*** Do not place wet rags on grout that has not sufficiently cured to a state where it can support them. If the rags settle into the wet grout, they will be very difficult to remove later, and they will not do a good job of keeping the grout hydrated for the required 3 to 7 days.

Torqueing Anchor Bolts in Fresh Grout
At an average temperature of 70 degrees F, allow a minimum of 72 hours for the grout to sufficiently cure before applying torque to any anchor bolts. Allow more time if temperatures are lower. Consult Unisorb for additional recommendations.

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