

Hard Hat Hi-Flow Construction Grout

Non-shrink, Non-metallic grout

DESCRIPTION

HH HI-FLOW CONSTRUCTION GROUT is a non-shrink, non-metallic, high-flow, cement-based grout. HH HI-FLOW CONSTRUCTION GROUT is formulated for a wide variety of grouting applications, from plastic to fluid through a controlled, positive expansion. Designed to provide effective load bearing for high flow precision grouting applications.

HH HI-FLOW CONSTRUCTION GROUT is an ideal product for interior or exterior grouting of architectural and structural precast concrete components, structural column base plates, machinery bases, anchoring bolts, cable anchorages, dowels, bearing pads, keyway joints, crane rails etc.

HH HI-FLOW CONSTRUCTION GROUT is used in power plants, steel mills, paper mills, oil refineries, food plants, sewage and water treatment plants or anywhere a high quality engineered grout is required.

FEATURES/BENEFITS

- High flow/High early compressive strength capability
- Minimize project downtime
- Controlled positive expansion for maximum effective bearing
- Non-metallic / Non-Corrosive
- Pourable / pumpable versatility
- Excellent freeze / thaw resistance
- Can be extended with pea stone for deep applications
- Resistant to thermal shock

SPECIFICATIONS

Corp of Engineers CRD-C-621 Grade A, B & C
ASTM C-1107. Grade A, B & C (formerly known as CRD-C-621)

APPLICATION

Surface must be clean, dry and free of all oil, grease, coating or residues that prevent absorption of chemical into surface. On new concrete surfaces, wait a minimum of 14 days (28 days, if possible) before applying. Product must be diluted with clean water prior to use. Use a plastic container or original container for this

as product is corrosive. See coverage/dilution chart. Apply only when temperatures are above 40°F. Apply by spray (low pressure), squeegee or push broom. Two applications are generally necessary, each after the other has dried. AVOID puddles to prevent area whiteness. To help avoid surface whiteness on terrazzo floors, or other extremely dense concrete floors, rinse with warm water before HARD HAT LIQUID FLOOR HARDENER dries completely. If whiteness occurs, it is an indication that either the diluted solution is too strong or the floor has reached its maximum absorption of the chemical. Recheck dilution ratios or add additional water to solution until whiteness no longer occurs. Remove whiteness by immediately scrubbing with water and a stiff bristle broom.

Texture and absorption of surfaces dictates final coverage rates. Warm water washing speeds removal.

For Concrete: Allow each application to dry before applying the next application. Texture and absorption of surfaces dictates final coverage rates.

Drying Time: 4 to 8 hours depending on temperature & humidity. Immediately clean tools with warm water.

Preparation: Remove all dirt, oil, and loose or foreign material. Any metal in contact with grout must be free of rust, oil, grease, and other foreign matter which would limit bond. Concrete surface must be sound and roughened to insure proper bonding. Prior to placing grout, surface must be saturated surface dry (SSD), if possible for an hour. Remove all excess water before placement of grout. Bolts, base plates and equipment must be secure and rigid before placement of grout. All materials and surfaces in contact with the grout should be conditioned between 50°- 80°F for proper performance. Provide heating or cooling, as necessary, to compensate for temperature extremes and changes in cure time

Forms: Allow for the continuous placement of grout. Provisions for venting to avoid air entrapment must be made. Placing from one side, provide a 45o angle in the forms to a height suitable to provide a head of grout during placement. On all

sides, provide a minimum 1" (2.54 cm) horizontal clearance between the base plate and forms. Forms should be at least 1" (2.54 cm) higher than the bottom of the base plate.

Mixing: Small quantities of grout may be hand mixed in a concrete mixing pan until lump free. For large quantities and continuous pours, mix using a mortar

TYPICAL PERFORMANCE DATA

| | Plastic | Flowable | Fluid |
|-----------------------------|-----------------|-----------------|-----------------|
| Water / 50 lb. | 6.5 - 6.8 pints | 6.8 - 7.8 pints | 7.8 - 8.4 pints |
| Compressive Strength | | | |
| | Plastic | Flowable | Fluid |
| 1 day | 4,300 psi | 3,500 psi | 3,000 psi |
| 3 days | 5,800 psi | 5,300 psi | 4,600 psi |
| 7 days | 8,700 psi | 7,600 psi | 5,900 psi |
| 28 days | 11,000 psi | 10,275 psi | 8,800 psi |
| Expansion Percentage | | | |
| | Plastic | Flowable | Fluid |
| 1 day | 0.07 | 0.03 | 0.03 |
| 3 days | 0.07 | 0.03 | 0.02 |
| 14 days | 0.07 | 0.03 | 0.02 |
| 28 days | 0.07 | 0.03 | 0.02 |

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.



13407 Yorba Ave.
Chino, CA 91710

hardhatconstructionsupply.com

Hard Hat Hi-Flow Construction Grout

Non-shrink, Non-metallic grout

mixer with rubber tipped blades or appropriate grout pump for a minimum of 5 minutes. Start with minimum water requirements.

Always add water to mixer first, then slowly add powder. Use only the amount of water required for the desired placement consistency. Mix in two steps: Add 2/3 of the water, add grout, after partial mixing add the remaining 1/3 of the water for desired consistency. Thoroughly mix total quantity for an additional 2 to 3 minutes. Do not mix more than can be placed before in 40 minutes.

Placing: Place continuously and quickly. Start from one side to avoid air entrapment. Be sure grout fills spaces and remains in contact with plate. **DO NOT VIBRATE.** A minimum of 1" (2.48 cm) vertical clearance should be maintained for base plate grouting applications. Thinner vertical clearances may require the use of another type of grout.

Curing: Immediately cover with clean, wet rags and keep moist until final set. After final set, remove rags and apply an ASTM-C-309 curing compound.

Special Conditions:

Deep application: Pre-washed and graded 3/8" (1 cm) pea gravel should be used in large applications (greater than 1' x 1') and thicker than 3" (7.62 cm) as follows:

3"-5" (7.62-12.7 cm): Add 25% of 3/8" (1 cm) pea gravel per 50 lb bag of grout.

5" (12.7 cm) and over: Add 50% of 3/8" (1 cm) pea gravel per 50 lb bag of grout. Place in 6" lifts with proper reinforcement

Hot weather conditions: Accelerates setting time and causes premature drying of the grout. Keep the grout cool. Store unopened bags in the shade. Provide shade for area to be grouted. Use cool or chilled mixing water. Protect grout from direct sun exposure for up to 24 hours after grouting. For additional information, refer to ACI 305 (Recommended Practices for Hot Weather Concreting).

Cold weather conditions: Retards strength gain and set time. Warm the grout above 50°F. Raise the temperature of the area to

be grouted with space heaters or steam. Warm the mixing water. Cover and insulate the grout to retain warmth. The minimum temperature (ambient, substrate, and grout) for grouting is 40oF (5oC) unless special provision are followed. For additional information, refer to ACI 306 (Recommended Practices for Cold Weather Concreting)

PACKAGING

50 lb (22.7Kg) multiple plastic lined bag will yield approximately 0.45 cu. ft. in a fluid condition.

50% by weight extension (25 lbs) of 3/8" pea stone will yield approximately 0.59 cu. ft.

STORAGE/SHELF LIFE

HH HI-FLOW CONSTRUCTION GROUT should be stored in a cool, dry interior area. At no time should material be exposed to high moisture, rain, or snow conditions. When stored in the original, tightly closed container, the shelf life is one year from the date of manufacture.

LIMITATIONS/PRECAUTIONS

DO NOT place at temperatures below 40oF (5oC) unless special provisions are followed. At low temperatures, water requirement should be field tested.

When nearby equipment causes vibration of the grout, during set, such equipment should be shut down for a period of 24 hours (at 73oF (23oC)). DO NOT mix over 5 minutes. DO NOT over water; this can cause bleeding or separation. DO NOT retemper. DO NOT add cement, sand, or admixtures.

Avoid hazards by following all precautions found in the Material Safety Data Sheets (MSDS), product labels, and technical literature

WARRANTY

**NOTICE-READ CAREFULLY
CONDITIONS OF SALE**

The manufacturer offers this product for sale subject to and limited by the warranty which may only be varied by written agreement of a duly authorized corporate officer of The manufacturer. No other representative of or for The manufacturer is authorized to grant any warranty or to waive limitation of liability set forth below.

WARRANTY LIMITATION

The manufacturer warrants this product to be free of manufacturing defects. If the product when purchased was defective and was within use period indicated on container or carton, when used, The manufacturer will replace the defective product with new product without charge to the purchaser. The manufacturer makes no other warranty, either expressed or implied, concerning this product. There is no warranty of merchantability. **NO CLAIM OF ANY KIND SHALL BE GREATER THAN THE PURCHASE PRICE OF THE PRODUCT IN RESPECT OF WHICH DAMAGES ARE CLAIMED.**

INHERENT RISK

Purchaser assumes all risk associated with the use or application of the product.



13407 Yorba Ave.
Chino, CA 91710

hardhatconstructionsupply.com