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HI-FLOW METALLIC GROUT

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HIGH-TOLERANCE / NON-SHRINK GROUT

HI-FLOW METALLIC GROUT is specially designed for use where high tolerance, high strength and high fluidity are required. It is formulated as a metallic aggregate system with a shrinkage-compensating binder. It is highly flowable without sacrificing strength or performance capabilities and is formulated to provide consistent and exacting performance.

PRIMARY APPLICATIONS

- Heavy duty grouting of machinery and equipment
- Structural columns
- Crane rails
- Bridge seats
- Bearing plates
- Anchorages

FEATURES / BENEFITS

- Reinforced with metallic aggregate for extra heavy-duty service conditions
- Highly fluid and extremely placeable for easy field use
- High strength for maximum load bearing
- Non-shrink with minimum positive expansion for high-tolerance performance
- Non-bleeding and non-segregating at a fluid consistency
- Does not contain any chlorides or additives which may contribute to corrosion of base structure
- Total shrinkage compensation which provides a maximum bearing surface for the greatest overall support
- Rapid strength gain to minimize turnaround time for equipment re-grouts
- Excellent working time at high ambient temperatures

PACKAGING / YIELD

HI-FLOW METALLIC GROUT is packaged in 50 lb (22.7 kg) bags and yields 0.40 ft^3 (0.013 m^3) of fluid grout when mixed with 1.0 gal (3.8 liter) of water.

TECHNICAL INFORMATION

Typical Engineering Data

The following results were developed under laboratory conditions.

Tested at a fluid consistency, 1.0 gal of water/50 lb grout (3.8 liter/22.7 kg).

Compressive Strength ASTM C-109, 2"(50 mm) cubes

1 day	4,000 psi (27 MPa)
3 days	6,000 psi (40 MPa)
7 days	7,000 psi (47 MPa)
28 days	9,000 psi (61 MPa)

Volume Change ASTM C-1090 & CRD-C-621

1 day	+.03%
3 days	+.03%
7 days	+.03%
28 days	+.03%

Flow Rate ASTM C-939 & CRD-C-611

(defined as fluid by CRD-C-621 & ASTM C-1090)

Initial	22 seconds
30 minutes	45 seconds
60 minutes	51 seconds

Setting Time ASTM C-191

Initial set	3 hours, 50 minutes
Final set	4 hours, 50 minutes

Flexural Strength ASTM C-78

3 days	1,000 psi (6.8 MPa)
7 days	1,200 psi (8.0 MPa)
28 days	1,300 psi (8.8 MPa)

Split Tensile Strength ASTM C-496

28 days	550 psi (3.7 MPa)

Stress Strain Analysis:

Tested in accordance with ASTM C-469 using 4" X 8" (100 mm x 200 mm) cylindrical specimens.

28 day	see figure 1
Young'sModulus	$4.2x10^6$ psi ($2.9x10^4$ MPa)
Toughness Index vs. Plain Concrete at f_c = 5,000 psi (35 MPa)	3.4

Appearance-HI-FLOW METALLIC GROUT is a free flowing powder designed to be mixed with water. After mixing and placing, the color may initially appear much darker than the surrounding concrete. While this color will lighten substantially as the grout cures and dries out, the grout may always appear somewhat darker than the surrounding concrete.

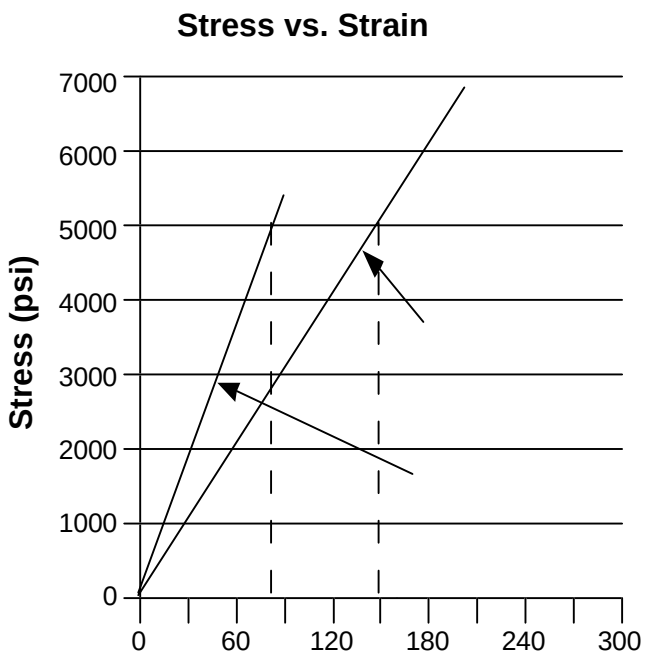

Figure 1

SPECIFICATIONS / COMPLIANCES

- Meets the requirements of CRD-C-621, Corps of Engineers Specification for Non-Shrink Grout.
- Shows positive expansion when tested in accordance with ASTM Specification C-1090, Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout.
- Meets the performance requirements of ASTM C-1107, Grades A & B as well as Grade C, combination volume adjusting grout standard specification for packaged, dry, hydraulic-cement grout (non-shrinkable).

DIRECTIONS FOR USE

The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin "Application Instructions-Cementitious Grouting". The document offers instructions detailing the general installation of Euclid Chemical manufactured cement-based grout products.

Note: If the contractor is not familiar with standard grout placement techniques, a pre-job meeting is suggested to review the project details unique to the particular job. Contact your local Euclid Chemical Company representative for additional information.

The information given here is offered in particular support to the mixing and placing of HI-FLOW METALLIC GROUT. This information should be used in conjunction with the Application Instructions guide mentioned above.

General Information-While HI-FLOW METALLIC GROUT is designed to be fluid poured at temperature ranges from 40-100°F (4-38°C) the product is most easily poured at temperatures of 60-70°F (16-21°C).

Mixing

Mixing Water Guide gal (liter)/bag

Consistency	Estimated Water Content
Fluid	1.0 (3.8)
Flowable	.85-1.0 (3.2-3.8)
Plastic	.75-.85 (2.8-3.2)

Do not use this product at a flow cone rate of less than 20 seconds if checking flow rates on the job site (see CRD-C-611or ASTM C-939 for flow cone method).

Where HI-FLOW METALLIC GROUT will be placed at a thickness over 4" (101.6 mm), up to 20 lb (9.1 kg) of pea gravel may be added to each bag of grout. Note that the water demand to achieve a certain flow level of the grout will change. Do not add sufficient water to promote bleeding or segregation of the grout.

Placing-HI-FLOW METALLIC GROUT should be placed continuously.

Curing & Sealing-Proper curing procedures are important to ensure the durability and quality of the grout. Wet cure the grout until the forms are stripped. Then, cure the grout with a high solids curing compound, such as SUPER REZ-SEAL, SUPER FLOOR COAT or SUPER AQUA-CURE VOX as described in the general grouting Application Instruction guide.

CLEAN-UP

Clean tools and equipment with water before the material hardens.

Shelf life is 2 years in original, unopened package.

PRECAUTIONS / LIMITATIONS

- Proper curing is required.
- Do not add admixtures or fluidifiers.
- Do not use material at temperatures that may cause premature freezing.
- Keep the grout from freezing until a minimum strength of 4,000 psi (28 MPa) is reached.
- Do not use as a topping.
- Store materials in a dry place.
- Employ cold weather or hot weather grout practices as the temperature dictates.
- Shoulder cracking may occur on wide shoulders, improperly cured shoulders, or at stress points such as shimpacks, bolts or plate stiffeners. These cracks are of no structural significance.
- Rate of strength gain is significantly affected at temperature extremes.

Form-Hi-Flow Metallic Grout-11.99