



EUCLID CHEMICAL

Guide Specification

The Euclid Chemical Company
19215 Redwood Road
Cleveland, OH 44110-2799
Phone: 800-321-7628
Fax: 216-531-9399
www.euclidchemical.com

HI-FLOW METALLIC GROUT

Metallic, Non-Shrink Grout

{Note to Specifier: This add-in specification component specifies Euclid Chemical Company, HI-FLOW METALLIC GROUT- High Tolerance, Non-Shrink Grout. HI-FLOW METALLIC GROUT is designed for critical use where high strength, high fluidity, high tolerance and positive expansion are required. HI-FLOW METALLIC GROUT contains only metallic aggregate and cementitious binder. The expansion in NS METALLIC GROUT is not dependent on oxidation of metallic aggregate or gas liberation. HI-FLOW METALLIC GROUT is formulated to be mixed and placed at fluid, flowable or plastic consistencies.}

{Note to Specifier: The paragraphs below are meant to be incorporated into Parts 2 and 3 of a standard CSI 3 Part Format specification, project's General Structural Notes or directly onto the plans. They must be carefully reviewed by a qualified design professional and edited to meet the particular requirements of the project at hand, assure compliance with any governing building codes, and coordinate with other specification sections and drawings.}

1.1 QUALITY REQUIREMENTS

- A. Manufacturer: ISO 9001 quality certified as primary manufacturer of specified products.

1.2 INFORMATIONAL SUBMITTALS

- A. Product List: List manufacturer name and product name for each product proposed for use as cementitious grout.
- B. Manufacturer Certificate: Indicating products listed on Contractor's Product List are compatible and suitable for the specified application.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Provide listed products of Euclid Chemical Co., Cleveland, OH; www.euclidchemical.com.
- B. Manufacturer Single Source: Provide cementitious grout products from a single qualified manufacturer.

2.2 CEMENTITIOUS GROUT

- A. Cementitious Grout: Cementitious grout for high performance applications.
 - 1. Product shall conform to:
 - a) CRD C621, US Army Corps of Engineers Specification for Non-Shrink Grout
 - b) ASTM C1107, Standard Specification for Packaged, Dry, Hydraulic-Cement Grout (non-shrink)

2. Basis of Design Product:
 - a) "HIGH-FLOW METALLIC GROUT" by The Euclid Chemical Company
 - b) Flow rate, ASTM C939/CRD C621 @75°F (24°C), 50% RH:
 - 1) Fluid consistency, 1.1 gal./50 lb (4.2 L/22.7 kg)
 - a) Initial: 22 seconds
 - b) 30 minutes: 45 seconds
 - c) 60 minutes: 51seconds
 - c) Compressive Strength, ASTM C109 Modified to ASTM C1107 Section 11.5, 2 in. (5 cm) cubes @ 75°F (24°C), 50% RH:
 - 1) Fluid consistency, 1.1 gal./50 lb (4.2 L/22.7 kg)
 - a) 1 day: 4000 psi (27 Mpa)
 - b) 3 days: 6000 psi (40 MPa)
 - c) 7 days: 7000 psi (47 MPa)
 - d) 28 days: 9000 psi (61 MPa)
 - d) Volume change, ASTM C1090/CRD621 @ 75°F (24°C), 50% RH:
 - 1) Fluid consistency, 1.1 gal./50 lb (4.2 L/22.7 kg)
 - a) 1, 3, 7, 28 days: + 0.03%
 - e) Setting time @75°F (24°C), 50% RH:
 - 1) Initial set: 3 hours 50 minutes
 - 2) Final set: 4 hours 50 minutes
 - f) Flexural strength, ASTM C348:
 - 1) 3 days: 1000 psi (7 MPa)
 - 2) 7 days: 1200 psi (8 MPa)
 - 3) 28 days: 1300 psi (9 MPa)
 - g) Split tensile strength, ASTM C496:
 - 1) 1 day: 550 psi (3.7 MPa)

PART 3: EXECUTION

{Note to Specifier: This section covers surface preparation, form preparation, mixing, placement, curing, and cleanup for Euclid Chemical's HI-FLOW METALLIC GROUT. For complete current instructions and safety information, consult the Technical Data and Material Safety sheets posted at www.euclidchemical.com. Note: The contractor and engineer are encouraged to consult and review the Euclid Chemical bulletin: "Cementitious Grout Application Guide": (http://euclidchemical.com/filesare/ProductFiles/MiscProductFiles/grout_instructions.pdf. The document offers instructions detailing the general installation of Euclid Chemical manufactured cement-based grout products. Important: 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 representative for additional information.}

3.1 SURFACE PREPARATION

- A. All surfaces to be in contact with grout shall be clean and free from rust, grease or oil.

- B. Saturate area to be grouted with water until it is uniformly damp. Remove excess water just before placing grout.

3.2 MIXING

- A. All grouting materials shall be 50°F to 80°F (10°C to 27°C) immediately prior to mixing.
- B. Mix grout in accordance with manufacturer's written instructions. Mix small quantities with a drill and "jiffy" mixer. Use a paddle type mortar mixer for large jobs.
- C. Charge mixing vessel with appropriate amount of clean, potable water for batch size and then add dry grout. Do not exceed water content recommended by manufacturer. Control water content. Do not add admixtures, sand or cement to grout.
- D. Mix for a minimum of 2 to 3 minutes.
- E. Check flow.

3.3 PLACEMENT

- A. Place grout in accordance with manufacturer's written instructions.
- B. For pouring, allow a minimum clearance of 2" (50 mm) for entry and 6" (150 mm) minimum grout head. On placing side, slope form to assist in grout movement and to prevent trapping air. Do not have close fitting forms. Allow 1" (25 mm) horizontal clearance and 1" (25 mm) vertical clearance for height above bottom of the baseplate. Forming must provide venting. Do not entrap air.
- C. Placed mixed grout immediately and continuously. Use rod or strapping to assist in placement if required.
- D. Contact manufacturer if placement thickness is to exceed 5".

3.4 FINISHING

- A. Finish grout in accordance with manufacturer's written instructions. Remove forms as soon as grout has stiffened or set sufficiently to prevent sagging away from the bottom of the baseplate. Cut back shoulders and finish to desired texture where required.
- B. Pond with water or cover with wet rags, burlap or plastic to prevent premature drying as soon as sheen of water disappears and grout attains initial set.

3.5 CURING

- A. Cure grout in accordance with manufacturer's written instructions.
- B. Following cut back, seal all surfaces with two (2) coats of a high solids curing compound. Alternately, keep all surfaces wet with water; covering with burlap or polyethylene for minimum of 72 hours.

3.6 CLEAN UP

- A. Tools and mixer may be cleaned with water.