



Specification Document
Product: SC Precision Grout HS

Section 03 60 00: Grouting

Part 1 – General

1.01 Summary:

- A. This specification outlines the requirements for the application of SC Precision Grout HS, a high-performance, high-strength, non-shrink, cementitious grout designed for critical grouting applications.

1.02 System Description

- A. The specification encompasses the use of high-strength grout for supporting and anchoring heavy machinery, base plates, and structural elements.

1.03 Quality Assurance

- A. Manufacturer qualifications: SpecChem must have an ongoing quality assurance program, independently audited regularly.
- B. Contractor qualifications: Must have successful experience in concrete construction.
- C. Comply with all safety and environmental conditions as recommended by SpecChem and local, state, and federal regulations. Refer to Safety Data Sheets (SDS) for safety and handling practices.

1.04 Delivery, Storage, and Handling

- A. Deliver in original, unopened packaging with labels clearly indicating manufacturer, product name, and batch number.
- B. Store materials off the ground in a dry, covered area.



C. Handle materials according to manufacturer's recommendations.

1.05 Job Conditions

- A. Do not apply in temperatures below 40°F or in wet conditions.
- B. Protect adjacent areas from spillage and grout overflow.

1.06 Submittals

- A. Submit manufacturer's product data, safety data sheets, and installation instructions.
- B. Provide proof of contractor's qualifications and experience in precision grouting.

Part 2 – Products

2.01 Manufacturer

- A. SC Precision Grout HS by SpecChem.

2.02 Materials

- A. High-strength, non-shrink, cement-based grout meeting ASTM C1107 requirements.

2.03 Performance Criteria

- **Compressive Strength (ASTM C109):**
 - 24 Hours: 9,450 psi (5.5 pints water) / 8,360 psi (5.75 pints water)
 - 3 Days: 10,875 psi (5.5 pints water) / 10,200 psi (5.75 pints water)
 - 7 Days: 12,150 psi (5.5 pints water) / 11,350 psi (5.75 pints water)
 - 28 Days: 15,560 psi (5.5 pints water) / 14,200 psi (5.75 pints water)
- **Hardened Expansion (ASTM C1090):**
 - 5.5 pints water: 0.09%
 - 5.75 pints water: 0.08%
- **Setting Time:**



- Initial: 150 minutes
- Final: 180 minutes
- **Consistency, Flow Test (2" x 4"):**
 - 5.5 pints water: 10 inches
 - 5.75 pints water: 10.5 inches
- **Mixed Density:**
 - 5.5 pints water: 145 lbs/cu ft
 - 5.75 pints water: 143 lbs/cu ft
- **Slant Shear Bond:**
 - 3 Days: 3,300 psi (5.5 pints water) / 3,050 psi (5.75 pints water)
 - 7 Days: 3,400 psi (5.5 pints water) / 3,140 psi (5.75 pints water)
 - 28 Days: 3,500 psi (5.5 pints water) / 3,220 psi (5.75 pints water)
- **Freeze-Thaw Resistance (ASTM C666, Procedure A):**
 - Durability Factor at 300 Cycles: 98.4%

Part 3 – Execution

3.01 Surface Preparation

- A. **Clean Surface:** Ensure the area where the grout will be applied is free from dirt, oil, and any loose or foreign materials. Metal surfaces in contact with the grout must be clean and free from rust, oil, grease, and other contaminants to ensure a strong bond.
- B. **Prepare Concrete Surface:** The concrete surface should be sound and roughened to enhance bonding. Achieve a saturated surface dry (SSD) state if possible for at least one hour before grouting. Ensure all excess water is removed prior to grout application.
- C. **Secure Components:** All bolts, base plates, and equipment should be securely fastened and stable to prevent movement during and after the grout placement.



- D. Temperature Control: Materials and surfaces to be in contact with the grout should be within 50°- 80°F for optimal performance. Adjust with heating or cooling as necessary to manage extreme temperatures or changes in cure time.
- E. Form Setup: Create forms to allow for continuous grout placement and include venting measures to prevent air entrapment. Position the forms to allow a 45° flow into them, ensuring at least 1" (2.54 cm) of horizontal clearance around the base plate.

Mixing and Application

A. Mixing Process:

- For single-bag quantities, use a heavy-duty drill/mixer in a 5-gallon pail. For larger amounts, employ a mortar mixer with rubber-tipped blades or an appropriate grout pump. Use 5.5 pints of water per 50 lb bag, ensuring not to exceed 5.75 pints.
- Begin mixing with the minimum water requirement, slowly adding the grout powder to the mixing water. After initially mixing for 3-4 minutes, allow a 30-second induction period before mixing for an additional minute to achieve the desired consistency.

B. Grout Placement:

- Ensure continuous and rapid placement from one side to minimize air entrapment. The grout should fill all spaces and maintain contact with the plate without vibrating. Maintain at least 1" (2.54 cm) of vertical clearance for base plate grouting applications.

C. Curing:

- Immediately after placement, cover the grout with clean, wet rags to retain moisture until the final set is achieved. Then, apply an ASTM C309 compliant curing compound.

D. Special Conditions:



- For deep applications (over 3”), incorporate pre-washed and graded 3/8” pea gravel to the mix as per specified ratios for depths of 3”-5” and over 5”. Adjust mixing and placement practices based on weather conditions, following ACI guidelines for hot (ACI 305) and cold (ACI 306) weather concreting.

3.02 Curing

- A. Follow ASTM C309 standards for curing, maintaining moist conditions or applying a curing compound for at least 72 hours.

3.03 Cleaning

- A. Clean tools and spills immediately with water before grout hardens.

3.04 Limitations/Precautions

- A. Do not add excess water or retemper grout.
- B. Protect freshly grouted areas from premature traffic and loads.