



Specification Document
Product: SC Precision Grout

DIVISION 3 - CONCRETE
Section 03 60 00 – Grouting

Part 1 – General

1.01 Summary

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

1.02 System Description

A. The specification covers the use of precision grout for the grouting of base plates, machine bases, anchor bolts, and other critical anchoring applications in both interior and exterior conditions.

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

Part 2 – Products

2.01 Manufacturer

- A. SC Precision Grout by SpecChem.

2.02 Materials

- A. Non-shrink, non-metallic, high-strength, cement-based grout complying with ASTM C1107.

2.03 Performance Criteria

- **Compressive Strength (ASTM C109):**
 - 1 Day:
 - Plastic: 4,300 psi
 - Flowable: 3,500 psi
 - Fluid: 3,000 psi
 - 3 Days:
 - Plastic: 5,800 psi
 - Flowable: 5,300 psi



- Fluid: 4,600 psi
- 7 Days:
 - Plastic: 8,700 psi
 - Flowable: 7,600 psi
 - Fluid: 5,900 psi
- 28 Days:
 - Plastic: 11,000 psi
 - Flowable: 10,275 psi
 - Fluid: 8,800 psi
- **Setting Time (ASTM C191):**
 - Initial Set:
 - Plastic: 1:50 hrs
 - Flowable: 3:10 hrs
 - Fluid: 4:00 hrs
 - Final Set:
 - Plastic: 3:00 hrs
 - Flowable: 3:40 hrs
 - Fluid: 5:40 hrs
- **Expansion Percentage (ASTM C1090):**
 - 1 Day:
 - Plastic: 0.07%
 - Flowable: 0.03%
 - Fluid: 0.02%
 - 3 Days:
 - Plastic: 0.07%
 - Flowable: 0.03%
 - Fluid: 0.02%
 - 14 Days:
 - Plastic: 0.07%



- Flowable: 0.03%
- Fluid: 0.02%
- 28 Days:
 - Plastic: 0.07%
 - Flowable: 0.03%
 - Fluid: 0.02%
- **Flexural Strength (ASTM C78):**
 - 28 Days: 1,315 psi
- **Tensile Strength (ASTM C190):**
 - 28 Days: 600 psi
- **Split Tensile Strength (ASTM C496):**
 - 28 Days: 735 psi

Part 3 – Execution

3.01 Surface Preparation:

1. **Clean the Area:** Begin by thoroughly cleaning the surface area of all dirt, oil, loose, or foreign material. Ensure any metal in contact with the grout is free from rust, oil, grease, and other substances that could impair bonding.
2. **Ensure Surface Readiness:** The concrete surface must be sound and roughened to improve bonding. Achieve a saturated surface dry (SSD) condition if possible for an hour before grouting, removing all excess water beforehand.
3. **Secure Equipment:** Bolts, base plates, and equipment must be securely fixed and rigid to prevent any movement during the placement of grout.
4. **Temperature Control:** Condition all materials and surfaces in contact with the grout to be between 50°- 80°F for optimal performance. Adjust with heating or cooling as needed to manage temperature extremes and cure time variations.
5. **Prepare Forms:** Design forms to allow for continuous grout placement, including venting provisions to prevent air entrapment. When setting up forms, ensure a



minimum of 1" (2.54 cm) horizontal clearance from the base plate and that the forms are at least 1" (2.54 cm) higher than the base plate bottom.

3.02 Mixing and Application:

A. Mixing Procedure:

- For small amounts, manual mixing in a concrete pan until lump-free is adequate. For larger quantities, use a mortar mixer with rubber-tipped blades or a suitable grout pump, mixing for a minimum of 5 minutes.
- Begin with the minimum water required, adding water to the mixer before the grout powder. Aim for the desired consistency by adding two-thirds of the water first, then the grout, followed by the remaining water after partial mixing. Ensure a thorough mix for an additional 2 to 3 minutes.

B. Application Steps:

- **Placing the Grout:** Ensure a continuous and rapid placement from one side to prevent air entrapment, ensuring the grout completely fills the required spaces and remains in contact with the plate. Use a rod or strapping in large or complex areas. Do not vibrate the grout, and only apply up to the bottom of the base plate.
- **Curing Process:** Immediately cover the grout with clean, wet rags, keeping it moist until the final set. After the final set, remove the rags and apply an ASTM C309 curing compound.

C. Special Conditions:

- **Deep Applications:** For applications deeper than 3", use pre-washed and graded 3/8" pea gravel, adjusting the quantity based on depth. Place in 6" lifts with proper reinforcement.
- **Weather Adjustments:** Modify practices for hot or cold conditions to ensure grout integrity. Store bags in shade and use cool water in hot weather; warm the grout and mixing water in cold weather, following ACI guidelines for hot (ACI 305) and cold (ACI 306) weather concreting.



3.03 Curing

A. Cure grout as per ASTM C309 standards, either by maintaining moist conditions for at least 72 hours or by applying an appropriate curing compound.

3.04 Cleaning

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

3.05 Limitations/Precautions

A. Do not add excess water or retemper grout.

B. Protect freshly grouted areas from premature traffic and loads.