

# Injection Grout

## Division 3: Concrete

A cementitious repair grout designed for the repair of cracks ranging from hairline to 3/4 inch (19mm).

### SECTION 030130 – MAINTENANCE OF CAST IN PLACE CONCRETE

#### PART 1 GENERAL

##### 1.1 SUMMARY

Provide labor, materials, equipment and supervision necessary to complete the application of product to existing substrate.

##### 1.2 SYSTEM DESCRIPTION

The products shall meet or exceed the following performance requirements:

Physical state and appearance		Dry, pigmented powder
Volume ratio		1 part water / 3.8 parts powder
Weight ration		1 pound water / 2.3 pounds powder
Viscosity		65-75 KU immediate lab
		7 Days      28 Days
Compressive strength – psi	ASTM C109	≥2800      ≥3800
Tensile strength – psi	ASTM C348	≥475

##### 1.3 SUBMITTALS

- A. Manufacturer's current product data bulletin.
- B. The applicator shall prepare a test area on the structure as a submittal for approval of proper application and adhesion.
- C. The applicator shall submit to the specifier a list of five projects that he has completed within the last five years, exhibiting the applicator's skills. The list shall include project name, location, and description of work and completion date.

##### 1.4 QUALITY ASSURANCE

Products shall be installed by an applicator with a minimum of five years' experience and meet the requirements of the specifier.

##### 1.5 DELIVERY, STORAGE & HANDLING

- A. Deliver all products in original labeled, sealed, and undamaged containers.
- B. Store all products in accordance with manufacturer's printed instructions.
- C. Handle products in accordance with manufacturer's printed instructions.

##### 1.6 PROJECT/SITE CONDITIONS

- A. Product shall be applied at minimum substrate and ambient temperatures of 40 degrees F.

- B. A minimum temperature of 40 degrees F shall be maintained for 24 hours after application.
- C. Do not apply products to frozen surfaces.
- D. Caution should be taken when installing products in temperatures above 90 degrees F. Protect the repair area from direct sunlight and ensure the repair zone does not flash dry.

## 1.7 SCHEDULING

The work requires close coordination with related sections and trades.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

The following manufacturers are approved for the project.  
Conproco

### 2.2 MATERIALS

Injection Grout: A cementitious repair grout designed for the repair of cracks ranging from hairline to 3/4 inch (19mm). The Injection grout has a very low viscosity which allows for excellent flowability to fill voids within masonry and concrete.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Installation shall be performed strictly in accordance with manufacturer's current product data bulletin.
- B. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- C. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas and landscaping from contact due to mixing, handling, and application of materials.

### 3.2 SURFACE PREPARATION

- A. Remove any surface contaminants that will inhibit proper bond.
- B. Transverse Cracks: For cracks across the face of the masonry unit, drill a series of injection ports in the middle of the crack. Ports should be drilled in a downward angle to increase grout flow. Seal the face of cracks with non-staining clay to temporarily "dam" the grout in the crack/void.
- C. Lateral Cracks (Delamination voids): Drill a series of ports in a square configuration at 90 degree angles to create a drill frame. Ports should be drilled in a downward angle to increase grout flow. Seal the face of cracks with non-staining clay to temporarily "dam" the grout in the crack/void.
- D. Use air or water to remove unseen debris from the crack interior prior to injection.
- E. Test all cracks and voids for proper flow prior to injection. If potable water will not flow into the crack, the injection grout will not be successful either.

### 3.3 APPLICATION

#### A. Flow Test

Test flow between ports with water flush to clean debris from drilling ports and ensure flow is established between ports.

#### B. Mixing

1. Mix by volume with approximately 3 parts powder to 1 part water in clean mixing vessel. Use 5.5 to 6.5 quarts of water per 30 pound pail of material.
2. Recommended to mix using a low speed drill (400-600 rpm) with a mixing paddle.
3. Mix continuously for 3 minutes to a uniform, lump-free consistency.
4. Mix only as much material as can be placed in 15 – 20 minutes.
5. Do not overmix as this will entrain excess air.

#### C. Application

1. At time of application surfaces must be saturated surface dry but hold no standing water.
2. Inject grout into lowest ports until there is no more flow or grout fills adjacent ports in drill frame.
3. Before moving to next port allow a short period of time to make sure grout flow is complete.
4. Seal port with clay and move to next port.
5. Any overflow or seepage from clay dam should be cleaned from face of substrate immediately with clean water. Do not allow grout to dry on face of substrate.

#### C. Curing

1. Keep repair zone damp. If repair is inaccessible, tape polyethylene over the area to retain moisture.
2. Protect repair from direct sunlight, wind, precipitation and frost during 24 hour cure.

### 3.4 CLEANING

- A. Remove hardened clay 24-48 hours after installation. Use stiff nylon brush and water to remove any latent clay within pores of substrate.
- B. Material left over at the job site by the approved applicator shall be removed.
- C. All adjacent surfaces and materials shall be cleaned.
- D. Cured material must be removed mechanically.

END OF SECTION 030130