

SECTION 03 61 00 CEMENTITIOUS GROUTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Pre-mixed non-metallic shrinkage resistant grout, pre-mixed water stop hydraulic cement grout, epoxy grout, and portland cement grout.
 - 1. Grout for leveling beds of structural steel plates.
 - 2. Sealing of joints and gaps between piping and structures.
 - 3. Sealing of joints between construction components.

1.2 REFERENCES

- A. ASTM C 109: Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 in. or 50 mm Cube Specimens).
- B. ASTM C 144: Standard Specification for Aggregate for Masonry Mortar.
- C. ASTM C 150: Standard Specification for Portland Cement.
- D. ASTM C 190: Standard Test Method for Tensile Strength of Hydraulic Cement Mortars.
- E. ASTM C 207: Standard Specification for Hydrated Lime for Masonry Purposes.
- F. ASTM C 472: Standard Methods for Physical Testing of Gypsum Plasters and Gypsum Concrete.
- G. ASTM C 595: Standard Specification for Blended Hydraulic Cements.
- H. ASTM C 881: Standard Specification for Epoxy -Resin -Base Bonding Systems for Concrete.
- I. ASTM C 1090: Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout.
- J. ASTM C 1107: Standard Specification for Packaged Dry Hydraulic Cement (Non-Shrink).
- K. ASTM C 1157: Standard Performance Specification for Blended Hydraulic Cement.
- L. ASTM D 570: Standard Test Method for Water Absorption of Plastics.
- M. ASTM D 638: Standard Test Method for Tensile Properties of Plastics.
- N. ASTM D 695: Standard Test Method for Compressive Properties of Rigid Plastics.

1.3 SUBMITTALS

- A. Grout mix components. Indicate proportions used, environmental conditions, and admixture limitations. Indicate material "Type", "Grade", and "Class" which suits Project requirements.
- B. Manufacturer's data for latex bonding agent.

PART 2 PRODUCTS

2.1 MATERIALS -GENERAL

A. Cement:

1. ASTM C 150 natural color Type II (normal) or Type IIA (air entrained).
2. ASTM C 595, or C 1157: Blended.

B. Lime: ASTM C 207, Type S, hydrated.

C. Water: Clean, non-staining and non-detrimental.

D. Grout Aggregate: ASTM C 144, standard masonry type.

2.2 PORTLAND CEMENT GROUT

A. Proportions by Volume: 1 part Portland cement, and sand equal to 2-1/2 to 3 times sum of volumes of cement and lime.

B. Mix thoroughly with water to form a stiff workable plastic putty.

C. Compressive Strength: ASTM C 109, 2800 psi in 28 days.

2.3 GYPSUM PLASTER GROUT

A. Premixed, prepackaged, wood fiber gypsum plaster with an ASTM C 472 minimum average dry compressive strength of 2000 psi in 28 days.

B. Mix with water per manufacturer's instructions for intended use to form a stiff plastic mix required for workability.

2.4 CEMENT BASED SHRINKAGE RESISTANT GROUT

A. Grade B or grade C premixed, non-metallic, non-gaseous product; ASTM C 1107 at a fluid consistency (flow cone) of 20 to 30 seconds. Thirty-minute-old grout shall flow through flow cone after slight agitation, in temperatures of 40 deg. F. to 90 deg. F.

B. Bleeding: None.

C. Compressive Strength: 6500 to 9000 psi, ASTM C 109 in 28 days.

D. Non-shrink percentage: 0.5 percent, ASTM C 1090.

2.5 EPOXY ADHESIVE GROUT

A. Two component material suitable for use on dry or damp surfaces, 100 percent solids, high modulus, moisture insensitive, complying with ASTM C 881.

1. Tensile Strength: ASTM D 638, 5000 psi, minimum in 14 days.

2. Tensile Elongation: ASTM D 638, 2 percent minimum.

3. Compressive Strength: ASTM D 695, 6500 psi minimum in 24 hours and 70 deg. F., 12,500 psi in 28 days and 70 deg. F.

4. Water Absorption: ASTM D 570, 1 percent maximum.

5. Bond Strength:

a. Direct Shear: 400 psi.

b. Direct Tension: 250 psi.

c. Beam Break: 800 psi.

6. Pot Life: 5 minutes maximum at 70 deg. F.

2.6 BONDING GROUT

A. Of approximately 1 part cement to 1 part fine sand passing a No. 30 sieve with approved

latex bonding agent when allowed.

2.7 PNEUMATICALLY PLACED PLASTER ("GUNITE" OR "SHOTCRETE")

- A. Materials: Portland cement, lime, water and sand.
- B. Compressive Strength: ASTM C 109, 2800 psi in 28 days.
- C. Proportioning: 1 part cement to not more than 5 parts sand.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Fill joints, voids, and pockets, completely.
- B. Comply with manufacturer's instructions and UBC Chapter 47.
- C. Finish surfaces exposed to view smooth.
- D. Pneumatically Placed Plaster: Screened and reused rebound material in an amount not greater than 25 percent of the total sand in any batch.

END OF SECTION