

**SECTION 04 05 16  
MASONRY GROUTING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

Section specifies grout materials and mixes.

**1.2 RELATED WORK:**

A. Grout used in Section:

1. Section 04 20 00, UNIT MASONRY.

**1.3 TESTS:**

- A. Test grout and materials specified.
- B. Certified test reports.
- C. Identify materials by type, brand name and manufacturer or by origin.
- D. Do not use materials until laboratory test reports are approved by COTR (Contracting Officer's Technical Representative) with approval of the Contracting Officer.
- E. After tests have been made and materials approved, do not change without additional test and approval of COTR (Contracting Officer's Technical Representative) with approval of the Contracting Officer.
- F. Testing:
  1. Test materials proposed for use for compliance with specifications in accordance with test methods contained in referenced specifications and as follows:
  2. Grout:
    - a. Test for compressive strength; ASTM C1019.
    - b. Grout compressive strength of 13790 kPa (2000 psi) at 28 days.
  4. Sand: Test for deleterious substances, organic impurities, soundness and grading.

**1.4 SUBMITTALS:**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Certificates:
  1. Indicating that following items meet specifications:
    - a. Portland cement.
    - b. Masonry cement.
    - c. Grout.
    - d. Hydrated lime.
    - e. Fine aggregate (sand).
- C. Laboratory Test Reports:
  1. Grout, each type.
  2. Admixtures.

D. Manufacturer's Literature and Data:

1. Cement, each kind.
2. Hydrated lime.
3. Admixtures.

**1.5 PRODUCT DELIVERY, STORAGE AND HANDLING:**

- A. Deliver masonry materials in original sealed containers marked with name of manufacturer and identification of contents.
- B. Store masonry materials under waterproof covers on planking clear of ground, and protect damage from handling, dirt, stain, water and wind.

**1.6 APPLICABLE PUBLICATIONS:**

- A. Publications listed below form a part of specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
  - C40-04.....Organic Impurities in Fine Aggregates for  
Concrete
  - C150-05.....Portland Cement
  - C207-06.....Hydrated Lime for Masonry Purposes
  - C404-07.....Aggregate for Masonry Grout
  - C476-07.....Grout for Masonry
  - C1019-05.....Sampling and Testing Grout

**PART 2 - PRODUCTS**

**2.1 HYDRATED LIME:**

ASTM C207, Type S.

**2.2 AGGREGATE FOR MASONRY GROUT:**

ASTM C404, Size 8.

**2.4 PORTLAND CEMENT:**

- A. ASTM C150, Type I.

**2.5 WATER:**

Potable, free of substances that are detrimental to grout, masonry, and metal.

**2.6 GROUT:**

- A. Conform to ASTM C476 except as specified.
- B. Grout type proportioned by volume as follows:
  1. Fine Grout:
    - a. Portland cement: one part.
    - b. Hydrated lime: 0 to 1/10 part.
    - c. Fine aggregate: 2-1/4 to three times sum of volumes of cement and lime used.

2. Coarse Grout:
  - a. Portland cement: one part.
  - b. Hydrated lime: 0 to 1/10 part.
  - c. Fine aggregate: 2-1/4 to three times sum of volumes of cement and lime used.
  - d. Coarse aggregate: one to two times sum of volumes of cement and lime used.
3. Sum of volumes of fine and coarse aggregates: Do not exceed four times sum of volumes of cement and lime used.

### **PART 3 - EXECUTION**

#### **3.1 MIXING:**

- A. Mix in a mechanically operated grout mixer.
  1. Mix grout for at least five minutes.
- B. Measure ingredients by volume. Measure by the use of a container of known capacity.
- C. Mix water with grout dry ingredients in sufficient amount to bring grout mixture to a pouring consistency.

#### **3.2 GROUT USE LOCATIONS:**

- A. Use fine grout for filling cells of concrete masonry units where the smallest dimension is 50 mm (2 inches) or less.
- B. Use either fine grout or coarse grout for filling cells of concrete masonry units where the smallest dimension is greater than 50 mm (2 inches).
- C. Do not use grout for filling bond beam or lintel units.

- - - E N D - - -