

**SECTION 04 05 13  
MASONRY MORTARING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

- A. Section specifies mortar materials and mixes.

**1.2 RELATED WORK:**

- A. Mortar used in Section:
2. Section 04 05 16, MASONRY GROUTING.
  3. Section 04 20 00, UNIT MASONRY.
- B. Mortar Color: Section 09 06 00, SCHEDULE FOR FINISHES, Natural - no pigment

**1.3 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. Mortar cement.
    - d. Hydrated lime.
    - e. Fine aggregate (sand).
- C. Laboratory Test Reports:
1. Mortar, each type.
  2. Admixtures.
- D. Manufacturer's Literature and Data:
1. Cement, each kind.
  2. Hydrated lime.
  3. Admixtures.
  4. Liquid acrylic resin.

**1.4 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.

**1.5 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
C91-05.....	Masonry Cement
C109-08.....	Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-MM Cube Specimens)
C144-04.....	Aggregate for Masonry Mortar
C150-09.....	Portland Cement
C207-06.....	Hydrated Lime for Masonry Purposes
C270-10.....	Mortar for Unit Masonry
C307-03(R2008).....	Tensile Strength of Chemical - Resistant Mortar, Grouts, and Monolithic Surfacing
C321-00(R2005).....	Bond Strength of Chemical-Resistant Mortars
C348-08.....	Flexural Strength of Hydraulic Cement Mortars
C595-10.....	Blended Hydraulic Cement
C780-10.....	Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
C979-10.....	Pigments for Integrally Colored Concrete
C1329-05.....	Mortar Cement

## **PART 2 - PRODUCTS**

### **2.1 HYDRATED LIME**

- A. ASTM C207, Type S.

### **2.2 AGGREGATE FOR MASONRY MORTAR**

- A. ASTM C144 and as follows:
  1. Light colored sand for mortar for laying face brick.
  2. White plastering sand meeting sieve analysis for mortar joints for pointing.
- B. Test sand for color value in accordance with ASTM C40. Sand producing color darker than specified standard is unacceptable.

### **2.3 BLENDED HYDRAULIC CEMENT**

- A. ASTM C595, Type IS, IP.

### **2.4 MASONRY CEMENT**

- A. ASTM C91. Type N, S, or M.

### **2.5 MORTAR CEMENT**

- A. ASTM C1329, Type N, S or M.

### **2.6 PORTLAND CEMENT**

- A. ASTM C150, Type I.

### **2.7 LIQUID ACRYLIC RESIN**

- A. A formulation of acrylic polymers and modifiers in liquid form designed for use as an additive for mortar to improve physical properties.

**2.8 WATER**

- A. Potable, free of substances that are detrimental to mortar, masonry, and metal.

**2.9 MASONRY MORTAR**

- A. Conform to ASTM C270.
- B. Admixtures:
  - 1. Do not use mortar admixtures, except for color admixtures unless approved by COR.
  - 2. Submit laboratory test report showing effect of proposed admixture on strength, water retention, and water repellency of mortar.
  - 3. Do not use antifreeze compounds.
- C. Colored Mortar:
  - 1. Maintain uniform mortar color for exposed work throughout.
  - 2. Match mortar color in approved sample or mock-up.
  - 3. Color of mortar for exposed work in alteration work to match color of existing mortar unless specified otherwise in section 09 06 00, SCHEDULE FOR FINISHES.
- D. Color Admixtures:
  - 1. Proportion as specified by manufacturer.
  - 2. For color, see Section 09 06 00, SCHEDULE FOR FINISHES.

**2.10 COLOR ADMIXTURE**

- A. Not used.

**PART 3 - EXECUTION****3.1 MIXING**

- A. Mix in a mechanically operated mortar mixer.
  - 1. Mix mortar for at least three minutes but not more than five minutes.
- B. Measure ingredients by volume. Measure by the use of a container of known capacity.
- C. Mix water with dry ingredients in sufficient amount to provide a workable mixture which will adhere to vertical surfaces of masonry units.
- D. Mortar that has stiffened because of loss of water through evaporations:
  - 1. Re-tempered by adding water to restore to proper consistency and workability.
  - 2. Discard mortar that has reached its initial set or has not been used within two hours.

**3.2 MORTAR USE LOCATION**

- A. Use Type S mortar for masonry containing vertical reinforcing bars (non-engineered) engineered reinforced unit masonry work.

- B. For brick veneer over frame back up walls, use Type N portland cement-lime mortar or Type S masonry cement or mortar cement mortar.
- C. Use Type N mortar for other masonry work, except as otherwise specified.

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