

**SECTION 04 05 13  
MASONRY MORTARING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION:**

Section specifies mortar materials and mixes.

**1.2 RELATED WORK:**

A. Mortar used in Section:

1. Section 04 05 31, MASONRY TUCK POINTING.

**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).
- f. Color admixture.

C. 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)



## **2.10 MASONRY MORTAR**

- A. Conform to ASTM C270.
- B. Admixtures:
  - 1. Do not use mortar admixtures, except for high bond mortar, and 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.
- D. Color Admixtures:
  - 1. Proportion as specified by manufacturer.

## **2.11 HIGH BOND MORTAR**

- A. Mixture by volume, one-part Portland cement, 1/4-part hydrated lime, three-parts sand, water, and liquid acrylic resin.
- B. Mortar properties when tested in accordance with referenced specifications.
  - 1. Compressive Strength, ASTM C109: Minimum 19,305 kPa (2800 psi), using 50 mm (2 inch) cubes.
  - 2. Tensile Strength, ASTM C307: 3861 kPa Minimum (560 psi), using the 25mm (1 inch) briquettes.
  - 3. Flexural Strength, ASTM C348: Minimum 6067 kPa (880 psi), using flexural bar.
  - 4. Bond Strength, ASTM C321: Minimum 2965 kPa (430 psi), using crossed brick.

## **2.12 COLOR ADMIXTURE**

- A. Pigments: ASTM C979.
- B. Use mineral pigments only. Organic pigments are not acceptable.
- C. Pigments inert, stable to atmospheric conditions, nonfading, alkali resistant and water insoluble.

## **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.
- E. Pointing Mortar:
  - 1. Mix dry ingredients with enough water to produce a damp mixture of workable consistency which will retain its shape when formed into a ball.
  - 2. Allow mortar to stand in dampened condition for one to 1-1/2 hours.
  - 3. Add water to bring mortar to a workable consistency prior to application.

### **3.2 MORTAR USE LOCATION**

- A. Use Type M mortar for precast concrete panels.
- B. Use Type S mortar for masonry containing vertical reinforcing bars (non-engineered), masonry below grade and setting cast stone and engineered reinforced unit masonry work.
- C. For brick veneer over frame back up walls, use Type N portland cement-lime mortar or Type S masonry cement or mortar cement mortar.
- D. Use Type N mortar for other masonry work, except as otherwise specified.
- E. Use Type N mortar for tuck pointing work.

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