

**SECTION 04 05 11**  
**MASONRY MORTARING**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

- A. Mortar for masonry.

**1.2 RELATED REQUIREMENTS**

- A. Installation of mortar, Section 04 20 00, UNIT MASONRY.

**1.3 SUBMITTALS**

- A. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C 270 is to be used. Also include required environmental conditions and admixture limitations.
- B. Reports:
1. Strength test for mortar:
    - a. Historic: Strength test for proposed mix. Provide 10 tests of actual mortar prepared with this mix during the last 12 months.
    - b. Field: Report strength of mortar provided for this project as indicated in PART 3.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

**1.4 QUALITY ASSURANCE**

- A. Comply with provisions of ACI 530/ASCE 5/TMS 402 and ACI 530.1/ASCE 6/TMS 602, except where exceeded by requirements of the contract documents.

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

**1.6 APPLICABLE PUBLICATIONS**

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
- B. American Concrete Institute: ACI
- |             |                          |   |
|-------------|--------------------------|---|
| 530 .....   | ACI 530/ASCE 5/TMS 402   | Building Code Requirements<br>for Masonry Structures; American Concrete Institute<br>International. |
| 530.1 ..... | ACI 530.1/ASCE 6/TMS 602 | Specification For Masonry<br>Structures; American Concrete Institute International.                 |

- C. American Society for Testing and Materials (ASTM):
- C 91.....Standard Specification for Masonry Cement.
  - C 144.....Standard Specification for Aggregate for Masonry Mortar.
  - C 150.....Standard Specification for Portland Cement.
  - C 207.....Standard Specification for Hydrated Lime for Masonry Purposes.
  - C 270.....Standard Specification for Mortar for Unit Masonry.
  - C 387/C 387M .....Standard Specification for Packaged, Dry, Combined Materials for Mortar and Concrete.
  - C 404.....Standard Specification for Aggregates for Masonry Grout.
  - C476.....Standard Specification for Grout for Masonry
  - C 780.....Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
  - C979.....Pigments for Integrally Colored Concrete
  - C1019.....Standard Test Method for Sampling and Testing Grout.
  - C 1142.....Standard Specification for Extended Life Mortar for Unit Masonry.
- D. Brick Industry Association - Technical Notes on Brick Construction (BIA):
- 11-1986 .....Guide Specifications for Brick Masonry, Part I
  - 11A-1988 .....Guide Specifications for Brick Masonry, Part II
  - 11B-1988.....Guide Specifications for Brick Masonry, Part III Execution
  - 11C-1998 .....Guide Specification for Brick Masonry Engineered Brick Masonry, Part IV
  - 11D-1988 .....Guide Specifications for Brick Masonry Engineered Brick Masonry, Part IV continued
  - 44B.....Wall Ties for Brick Masonry, Tech Notes 44B by the Brick Industry Association.
  - 46 .....Maintenance of Brick Masonry, Tech Notes 46 by the Brick Industry Association

## **PART 2 - PRODUCTS**

### **2.1 GENERAL**

- A. This Project will permit the production of mortar and grout using either raw materials (cement, lime, aggregate) or pre-mixed products such as masonry cement and package dry mortar at the Contractor's option.
- B. This Project will permit either ready-mix or site mixed mortar and grout at the Contractor's option.

### **2.2 MATERIALS**

- A. Masonry Cement: ASTM C 91, Type N.
- B. Portland Cement: ASTM C 150, Type I - Normal; color as required to produce approved color sample.
- C. Packaged Dry Mortar: ASTM C 387/C 387M, Type N, using gray color cement.
- D. Color Additive: Provide color additive as necessary to produce a mortar color closely matching existing.
- E. Hydrated Lime: ASTM C 207, Type S.
- F. Mortar Aggregate: ASTM C 144.
- G. Water: Clean and potable.

### **2.3 MORTAR MIXES**

- A. Ready Mixed Mortar: ASTM C 1142, Type RM.
- B. Mortar for Unit Masonry: ASTM C 270, Property Specification.
  - 1. Exterior, non-loadbearing masonry: Type N.
- C. Colored Mortar:
  - 1. Maintain uniform mortar color for exposed work throughout.
  - 2. Color of mortar for exposed work in alteration work to match color of existing mortar.

### **2.4 MORTAR MIXING**

- A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C 270 and in quantities needed for immediate use.
- B. Maintain sand uniformly damp immediately before the mixing process.
- C. Do not use anti-freeze compounds to lower the freezing point of mortar.
- D. If water is lost by evaporation, re-temper only within two hours of mixing.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Install mortar to requirements of section(s) in which masonry is specified.

### **3.2 FIELD QUALITY CONTROL**

- A. Advise the testing agency, the Owner's Representative and the Architect/ Engineer at least 24 hours before masonry or grout work is to be done.
- B. Mortar Tests: Test each type of mortar in accordance with ASTM C 780, testing once for every 3400 square feet for masonry wall surface laid up, but not less than once per day when mortar is being used.
  - 1. Test for compressive strength.

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