

SECTION 04100  
MORTAR AND GROUT

## PART 1 GENERAL

## 1.1 SECTION INCLUDES:

- A. Mortar for Masonry
- B. Grout for Unit Masonry

## 1.2 REFERENCES

- A. ACI 530/ASCE 5/TMS 402 - Building Code Requirements for Masonry Structures
- B. C530.1/ASCE 6/TMS 602 - Specifications for Masonry Structures
- C. ASTM C91 - Masonry Cement
- D. ASTM C94 - Ready-Mixed Concrete
- E. ASTM C144 - Aggregate for Masonry Mortar
- F. ASTM C150 - Portland Cement
- G. ASTM C207 - Hydrated Lime for Masonry Purposes
- H. ASTM C270 - Mortar for Unit Masonry
- I. ASTM C404 - Aggregates for Masonry Grout
- J. ASTM C476 - Grout for Masonry
- K. ASTM C595 - Blended Hydraulic Cement
- L. ASTM C780 - Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
- M. ASTM C1019 - Test Method of Sampling and Testing Grout
- N. Florida Building Code.

## 1.3 SUBMITTALS

- A. Submit mix design for mortar indicating whether the proportion or the property specification of ASTM C270 is to be used.
- B. Submit mix design for grout indicating conformance of grout to requirements of ASTM C476.
- C. Submit test reports indicating conformance of mortar materials to property specifications of ASTM C270.
- D. Submit test reports of pre-construction tests of mortar for consistency, mortar aggregate ratio, water content, air content, compressive strength and splitting tensile strength in conformance with ASTM C780.
- E. Submit test reports of grout tests in conformance to ASTM C1019.
- F. Submit manufacturer's certificate for products indicating conformance with specified requirements.
- G. Submit two samples representative of mortar color.

## 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original unopened containers and store in dry weather-tight enclosures.
- B. Stockpile and handle aggregates to prevent segregation and contamination.
- C. Maintain sand for volume proportioning of mortar and grout in a damp loose condition.

## 1.5 ENVIRONMENTAL REQUIREMENTS

- A. Follow requirements of ACI530.1/ASCE6/TMS 602-99 for cold and hot weather construction.

## PART 2 PRODUCTS

### 2.1 MORTAR MATERIALS

- A. Cementitious Materials:
  - 1. Masonry Cement: ASTM C91, Type M or S, gray color.
  - 2. Portland Cement: ASTM C150, Type I, gray color.
  - 3. Hydrated Lime: ASTM C207, Type S.
- B. Sand: ASTM C144.
- C. Water: Suitable for drinking, clean, and free of harmful amounts of acid, alkalies, salts, or organic materials.
- D. Admixtures:
  - 1. When required use only non-chloride based accelerators as approved by specifier.
  - 2. No antifreeze substances shall be added to the mortar.
- E. Pigments: When required used mineral oxide pigments not to exceed 5% of the weight of masonry cement or 10% of the weight of Portland cement in the mortar.

### 2.2 GROUT MATERIALS

- A. Portland Cement: ASTM C150, Type I.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Aggregates: ASTM C404.
- D. Water: Suitable for drinking, clean, and free of harmful amounts of acid, alkalies, salts, or organic materials.

### 2.3 MORTAR MIXES

- A. Mortar: ASTM C270, Type M or S in conformance with proportion specifications.

### 2.4 GROUT MIXES

- A. Grout: ASTM C476, coarse grout meeting proportion requirements.

### 2.5 MORTAR MIXING

- A. Measure sand by volume or equivalent weight; do not measure by shovel.
- B. In clean mortar mixer, mix ingredients for 3 to 5 minutes with maximum amount of water to produce proper workability.
- C. Re-temper mortar as needed within 2½-hours after initial mixing.
- D. Discard unused mortar 2½-hours after initial mixing.

### 2.6 GROUT MIXING

- A. Control batching procedure to ensure proper volume proportions of grout materials and achieve grout slump between 8" and 11".
- B. Mix grout in accordance with ASTM C94.

- C. Measure grout materials mixed at job site by volume and mix all ingredients in mechanical mixer for minimum of five minutes.

## 2.7 MIX TESTS

- A. Testing of Mortar: In accordance with ASTM C270
- B. Testing of Grout: In accordance with ASTM C1019

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install mortar and grout in accordance with ACI 530.1/ASCE 6/TMS 602-99.

### 3.2 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under the provisions of Section 01400.
- B. Testing of Mortar: In accordance with ASTM C780 for consistency, mortar aggregate ratio, water content, air content, compressive strength and splitting tensile strength.
- C. Testing of Grout: In accordance with ASTM C1019

END OF SECTION