

SECTION 04 05 13
MASONRY 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. ACI 530.1/ASCE 6/TMS 602 - Specifications for Masonry Structures
- C. ASTM C91/C91M - Standard Specification for Masonry Cement
- D. ASTM C94/C94M- Standard Specification for Ready-Mixed Concrete
- E. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar
- F. ASTM C150/C150M - Standard Specification for Portland Cement
- G. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes
- H. ASTM C270 - Standard Specification for Mortar for Unit Masonry
- I. ASTM C404 - Standard Specification for Aggregates for Masonry Grout
- J. ASTM C476 - Standard Specification for Grout for Masonry
- K. ASTM C595/C595M - Standard Specification for Blended Hydraulic Cement
- L. ASTM C780 – Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry
- M. ASTM C1019 – Standard Test Method of Sampling and Testing Grout
- N. FBC - Florida Building Code

1.3 SUBMITTALS

- A. Submit mix design for mortar indicating whether to use the proportion or the property specification of ASTM C270.
- B. Submit mix design for grout indication 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 for cold and hot weather construction.

PART 2 PRODUCTS

2.1 MORTAR MATERIALS

- A. Cementitious Materials:
 - 1. Masonry Cement: ASTM C91/C91M, Type M or S, gray color
 - 2. Portland Cement: ASTM C150/C150M, Type I, gray color

- 3. Hydrated Lime: ASTM C207, Type S
 - B. Sand: ASTM C144
 - C. Water: Provide 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. Do not add antifreeze substances 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/C150M, Type I
 - B. Hydrated Lime: ASTM C207, Type S
 - C. Aggregates: ASTM C404
 - D. Water: Provide water suitable for drinking, clean, and free of harmful amounts of acid, alkalis, salts, or organic materials.
- 2.3 MORTAR MIXES
- A. Mortar: Provide ASTM C270, type 'M' or type '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.

3.2 FIELD QUALITY CONTROL

- A. Architect, Owner, or Building Department may request field inspections per Section 01 40 00 1.7 Quality Control.
- B. Test Mortar in accordance with ASTM C780 for consistency, mortar aggregate ratio, water content, air content, compressive strength, and splitting tensile strength.
- C. Test Grout in accordance with ASTM C1019

END OF SECTION