

## SECTION 04100

### MORTAR

#### 1. PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Mortar and Grout for Masonry.

##### 1.2 RELATED WORK

- A. Section 01400 - Quality Control: Testing laboratory services.
- B. Section 02722 - Storm Sewerage Systems.
- C. Section 02732 - Sanitary Sewer Systems.

##### 1.3 REFERENCES

- A. ASTM C5 - Quicklime for Structural Purposes.
- B. ASTM C91 - Masonry Cement.
- C. ASTM C94 - Ready-Mixed Concrete.
- D. ASTM C144 - Aggregate for Masonry Mortar.
- E. ASTM C150 - Portland Cement.
- F. ASTM C207 - Hydrated Lime for Masonry Purposes.
- G. ASTM C270 - Mortar for Unit Masonry.
- H. ASTM C387 - Packaged, Dry, Combined Materials, for Mortar and Concrete.
- I. ASTM C404 - Aggregates for Masonry Grout.
- J. ASTM C476 - Grout for Masonry.
- K. ASTM C595 - Blended Hydraulic Cement.
- L. ASTM C780 - Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
- M. ASTM C1019 - Method of Sampling and Testing Grout.
- N. IMIAC - International Masonry Industry All-Weather Council: Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.

- 1.4 DELIVERY, STORAGE, AND HANDLING
  - A. Deliver products to site under provisions of Section 01600 – Material and Equipment.
  - B. Store and protect products under provisions of Section 01600 – Material and Equipment.
  - C. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.
- 1.5 ENVIRONMENTAL REQUIREMENTS
  - A. Maintain materials and surrounding air temperatures to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.
  - B. Cold Weather Requirements: IMIAC - Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.
- 1.6 MIX TESTS
  - A. Test mortar and grout in accordance with Section 01400 – Quality Control.
  - B. Testing of Mortar Mix: In accordance with ASTM C780.
  - C. Testing of Grout Mix: In accordance with ASTM C1019.
- 2. PART 2 PRODUCTS
  - 2.1 MATERIALS
    - A. Portland Cement: ASTM C150, Type I, gray color.
    - B. Blended Cement: ASTM C595, Type S.
    - C. Masonry Cement: ASTM C91, Type M.
    - D. Mortar Aggregate: ASTM C144, standard masonry type.
    - E. Hydrated Lime: ASTM C207, Type N.
    - F. Quicklime: ASTM C5, non-hydraulic type.
    - G. Premix Mortar: ASTM C387, using gray cement, High-Early strength.
    - H. Grout Aggregate: ASTM C404.
    - I. Water: Clean and potable.
    - J. Bonding Agent: "Concresive 1001 L.P.L." or equivalent.
  - 2.2 MORTAR COLOR
    - A. Mortar Color: Shall be natural.

### 2.3 ADMIXTURES

- A. Anti-Freeze compounds to lower the freezing point of mortar shall not be used. Accelerators or other admixtures shall not be permitted without Engineer's written approval.

### 2.4 MORTAR MIXES

- A. Mortar for Load Bearing Walls and Partitions: ASTM C270, utilizing the Proportion Method to achieve 2500 psi 28-day strength.
- B. Mortar for Non-load Bearing Walls and Partitions: ASTM C270, utilizing the Proportion Method to achieve 2500-psi 28-day strength.
- C. Mortar for Reinforced Masonry: ASTM C270, utilizing the Proportion Method to achieve 2500-psi 28-day strength.
- D. Pointing Mortar: ASTM C270.

### 2.5 MORTAR MIXING

- A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C270.
- B. Add admixtures in accordance with manufacturer's instructions, in accordance with Section 2.04, and provide uniformity of mix and coloration.
- C. Do not use anti-freeze compounds to lower the freezing point of mortar.
- D. If water is lost by evaporation, retemper only within two hours of mixing.
- E. Use mortar within two hours after mixing at temperatures of 80° F, or two-and-one-half hours at temperatures under 50° F.

### 2.6 GROUT MIXES

- A. Bond Beams: Lintels: Shall obtain 2500 psi strength at 28 days; 7-8 inch slump; premixed type in accordance with ASTM C94 or mixed in accordance with ASTM C476.
- B. Engineered Masonry: 2500 psi strength at 28 days; 7-8 inch slump; premixed type in accordance with ASTM C94 or mixed in accordance with ASTM C476.

### 2.7 GROUT MIXING

- A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C476.
- B. Add admixtures in accordance with manufacturer's instructions, in accordance with Section 2.04, and provide uniformity of mix.
- C. Do not use anti-freeze compounds to lower the freezing point of grout.

3. PART 3 EXECUTION

3.1 EXAMINATION

- A. Request inspection of spaces to be grouted.

3.2 PREPARATION

- A. Apply bonding agent to existing surfaces.
- B. Plug cleanout holes with like masonry units to prevent leakage of grout materials. Brace masonry for wet grout pressure.

3.3 INSTALLATION

- A. Install mortar and grout in accordance with premix manufacturer's instructions.
- B. Work grout into masonry cores and cavities to eliminate voids.
- C. Do not displace reinforcement while placing grout.
- D. Remove grout spaces of excess mortar.

3.4 SCHEDULES

- A. Exterior Cavity Wall: Type S mortar with Type N pointing mortar.

END OF SECTION