

**SECTION 03000
MORTAR**

PART I: GENERAL

1.1 GENERAL REQUIREMENTS

- A. Mortar and grout for masonry.

1.2 MEASUREMENT AND PAYMENT

- A. Unit Prices:

1. No separate payment shall be made for mortar for facilities under this Section. Include payment in Lump Sum for building or structure with price breakdown included in Schedule of Values.
2. No separate payment shall be made for mortar utilities under this Section. Include payment in unit price for the utility work.
3. Refer to Section 01270 – Measurement and Payment and Section 01200 – Schedule of Values.

- B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in Total Stipulated Price.

1.3 REFERENCES

- A. ASTM – American Society for Testing and Material.

1. ASTM C109 – Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
2. ASTM C143 – Standard Testing Method for Slump of Hydraulic Cement Concrete
3. ASTM C144 – Standard Specification for Aggregate for Masonry Mortar.
4. ASTM C150 – Standard Specification for Portland Cement.
5. ASTM C207 – Standard Specification for Hydrated Lime for Masonry Purposes.
6. ASTM C270 – Standard Specification for Mortar for Unit Masonry.
7. ASTM C404 – Standard Specification for Aggregates for Masonry Grout.
8. ASTM C476 – Standard Specification for Grout for Masonry.
9. ASTM C780 – Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.

- B. CFTS – City of Friendswood Technical Specifications.

1.4 SUBMITTALS

- A. Conform to requirements of Section 01330 – Submittal Procedures.
- B. Include design mix, indicate Property Method used, required environmental conditions, and admixture limitations.
- C. Samples: Submit two (2) ribbons of each mortar color, illustrating color

and color range.

- D. Submit test reports under provisions of Section 01450 – Contractor's Quality Control.
- E. Submit test reports on mortar indicating conformance to ASTM C270.
- F. Submit test reports on grout indicating conformance to ASTM C476.
- G. Submit manufacturer's certificate under provisions of Section 01450 – Contractor's Quality Control, that products meet or exceed specified requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site and store and protect products under provisions of Section 01610 – Approved Products List.
- B. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Maintain materials and surrounding air temperatures to a minimum fifty degrees Fahrenheit (50° F) prior to, during, and forty-eight hours (48 Hrs) after completion of masonry work.

1.7 MIX TESTS

- A. Test mortar and grout in accordance with Sections 01470 – Testing Laboratory Services and 01475 – Quality Control Testing Procedures.
- B. Testing of Mortar Mix: Test in accordance with ASTM C780. Test mortar mix for compressive strength, consistency, mortar aggregate ratio, water content, air content, and splitting tensile strength.
- C. Testing of Grout Mix: Test in accordance with ASTM C109. Test grout mix for compressive strength and slump.

PART II: PRODUCTS

2.1 MATERIALS

- A. Portland Cement: ASTM C150, Type I, white color.
- B. Masonry Cement: Not permitted.
- C. Mortar Aggregate: ASTM C144, standard masonry type. Grading and color suitable for type of masonry, one (1) source for entire project. [Not less than five percent (5%) shall pass No. 100 sieve].
- D. Hydrated Lime: ASTM C207, Type S.
- E. Grout Aggregate: ASTM C404.
- F. Water: Clean and potable.

2.2 MORTAR COLOR

- A. Mortar Color: Mineral oxide pigment; color; to be selected by the Project Manager from manufacturer's samples.

2.3 ADMIXTURES

- A. Antifreeze: Antifreeze admixtures shall not be permitted.

- B. Accelerator: Accelerator may be used only with approval of the Project Manager.

2.4 MORTAR

- A. Mortar for Load Bearing Walls and Partitions: ASTM C270, Type S utilizing Property Method to achieve one thousand eight hundred pounds per square inch (1800 psi) strength.
- B. Mortar for Non-load Bearing Walls and Partitions: ASTM C270, Type S utilizing the Property Method to achieve one thousand eight hundred pounds per square inch (1800 psi) strength.
- C. Mortar for Masonry Below Grade or in Contact with Earth: ASTM C270, Type M utilizing the Property Method to achieve two thousand five hundred pounds per square inch (2500 psi) strength.
- D. Pointing Mortar: ASTM C270, Type N, using the Property Method to achieve seven hundred fifty pounds per square inch (750 psi) strength.

2.5 MORTAR MIXING

- A. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C270 to achieve strengths noted in Paragraph 2.4.
- B. Add mortar color and admixtures in accordance with manufacturer's instructions. Provide uniformity of mix and coloration.
- C. Do not use anti-freeze compounds to lower freezing point of mortar.
- D. If water is lost by evaporation, retemper only within two hours (2 Hrs) of mixing.
- E. Use mortar within two hours (2 Hrs) after mixing at temperatures of eighty degrees Fahrenheit (80° F), or two and one-half hours (2-1/2 Hrs) at temperatures under fifty degrees Fahrenheit (50° F).

2.6 GROUT

- A. Bond Beams, Lintels, and Other Areas to be Grouted Solid: Three thousand pounds per square inch (3000 psi) strength at twenty-eight days (28 D); seven inch (7 In) to eight inch (8 In) slump per ASTM C143; mixed in accordance with ASTM C476, Fine Grout.

2.7 GROUT MIXING

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

PART III: EXECUTION

3.1 EXAMINATION

- A. Request inspection of spaces to be grouted.

3.2 PREPARATION

- A. Apply bonding agent to existing concrete surfaces.
- B. Plug clean out holes with 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 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.

END OF SECTION