

Section 04061

MORTAR

PART 1 GENERAL

1.01 SUMMARY

This Section includes mortar and grout for masonry.

1.02 MEASUREMENT AND PAYMENT

A. Unit Prices.

1. No separate payment will be made for mortar under this Section unless specifically noted in bid documents. Include payment in unit price for applicable utility structure section.
2. Refer to Section 01270 – “Measurement and Payment”.

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

1.03 REFERENCES

- A. ASTM C143/C143M REV A - Standard Testing Method for Slump of Hydraulic-Cement Concrete.
- B. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
- C. ASTM C150/C150M - Standard Specification for Portland Cement.
- D. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes.
- E. ASTM C270 REV A - Standard Specification for Mortar for Unit Masonry.
- F. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
- G. ASTM C476 - Standard Specification for Grout for Masonry.
- H. ASTM C780 REV A - Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
- I. ASTM C109/C109M – Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50-mm] Cube Specimens).

1.04 SUBMITTALS

- A. Submit product data and samples under provisions of Section 01330 – “Submittal Procedures”.
- B. Include design mix, indicate Property Method used, required environmental conditions, and admixture limitations.
- C. Samples: Submit two 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 REV A.
- 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

1.05 RELATED REQUIREMENTS

- A. Section 01270 – “Measurement and Payment”
- B. Section 01292 – “Schedule of Values”
- C. Section 01330 – “Submittal Procedures”
- D. Section 01450 – “Contractor’s Quality Control”
- E. Section 01454 – “Testing laboratory Services”
- F. Section 01610 – “Basic Product Requirements”

1.06 – 1.07 NOT USED

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site and store and protect products under provisions of Section 01610 – “Basic Product Requirements”.
- B. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.
- C. Environmental Requirements

Maintain materials and surrounding air temperatures to minimum 50 degrees F prior to, during, and 48 hours after completion of masonry work.

1.09 – 1.13 NOT USED

PART 2 PRODUCTS

2.01 MANUFACTURER(S) (NOT USED)

2.02 MATERIALS AND/OR EQUIPMENT

- A. Portland Cement: ASTM C150/C150M, 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 source for entire project. (Not less than 5 percent shall pass No. 100 sieve).
- D. Hydrated Lime: ASTM C207, Type S.
- E. Grout Aggregate: ASTM C404.
- F. Water: Clean and potable
- G. Mortar Color

Mortar Color: Mineral oxide pigment; color; to be selected by the Owner from manufacturer's samples.

- H. Admixtures
 - 1. Antifreeze: Antifreeze admixtures will not be permitted.
 - 2. Accelerator: Accelerator may be used only with approval of Project Manager.
- I. Mortar
 - 1. Mortar for Load Bearing Walls and Partitions: ASTM C270 REV A, Type S utilizing Property Method to achieve 1800 psi strength.
 - 2. Mortar for Non-load Bearing Walls and Partitions: ASTM C270 REV A, Type S utilizing the Property Method to achieve 1800 psi strength.
 - 3. Mortar for Masonry Below Grade or in Contact with Earth: ASTM C270 REV A, Type M utilizing the Property Method to achieve 2500 psi strength.
 - 4. Pointing Mortar: ASTM C270 REV A, Type N, using the Property Method to achieve 750 psi strength.

J. Grout

Bond Beams, Lintels, and Other Areas to be Grouted Solid: 3000 psi strength at 28 days; 7 to 8 inches slump per ASTM C143/C143M REV A; mixed in accordance with ASTM C476, Fine Grout.

2.03 – 2.04 NOT USED

PART 3 EXECUTION

3.01 GENERAL/MANUFACTURER(S) (NOT USED)

3.02 PREPARATION

A. Examination

Request inspection of spaces to be grouted.

B. Preparation

1. Apply bonding agent to existing concrete surfaces.
2. Plug clean out holes with masonry units to prevent leakage of grout materials. Brace masonry for wet grout pressure.

3.03 ERECTION/INSTALLATION APPLICATION AND/OR CONSTRUCTION

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.

E. Mortar Mixing

1. Thoroughly mix mortar ingredients in quantities needed for immediate use in accordance with ASTM C270 REV A to achieve strengths noted in Paragraph 2.02.I.
2. Add mortar color and admixtures in accordance with manufacturer's instructions. Provide uniformity of mix and coloration.
3. Do not use anti-freeze compounds to lower freezing point of mortar.
4. If water is lost by evaporation, retemper only within 2 hours of mixing.

5. Use mortar within 2 hours after mixing at temperatures of 80 degrees F, or 2½ hours at temperatures under 50 degrees F.

F. Grout Mixing

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

3.04 – 3.07 NOT USED

3.08 DEMONSTRATION / TESTING AND INSPECTION

A. Mix Tests

1. Test mortar and grout in accordance with Section 01454 – “Testing Laboratory Services”.
2. Testing of Mortar Mix: Test in accordance with ASTM C780 REV A. Test mortar mix for compressive strength, consistency, mortar aggregate ratio, water content, air content, and splitting tensile strength.
3. Testing of Grout Mix: Test in accordance with ASTM C109/C109M. Test grout mix for compressive strength and slump.

3.09 – 3.10 NOT USED

END OF SECTION