SECTION 04100

MORTAR

04100.01 GENERAL

A. Description

Mortar shall include, but not necessarily be limited to, furnishing prepackaged or site mixed mortar for masonry, pipe connections, grouting, and other uses as specified in the Contract Documents or as directed by the Engineer.

B. Related Work Included Elsewhere

Non-shrink grouts and mortars; Section 03600.

C. Quality Assurance

The Engineer will inspect all materials before and/or after installation to ensure compliance with the Contract Documents.

D. Submittals

1. Shop Drawings

   Shop drawings shall be submitted as specified in the "General Provisions" for all mortar admixtures. The shop drawings shall include product information, storage, handling, proportioning, and mixing instructions or recommendations.

2. Certificate of Compliance

   Certificates of compliance shall be submitted in accordance with the "General Provisions" for Portland cement, hydrated lime, and masonry cement stating that the material meets the requirements specified in Section 04100.02.

04100.02 MATERIALS

A. Materials Furnished by the County

1. The County will not furnish any materials for mortar.

2. The Contractor may obtain potable water from the County's potable water system for mixing with the dry material. The Contractor shall contact the County's Bureau of Utilities, Meter Section for requirements.

B. Contractor's Options

Not applicable.

C. Detailed Material Requirements

1. Water from Other Than Potable Sources

   Water shall meet the pH requirements of AASHTO T 26, Method B. Water shall not smell or be discolored. Water suspected of questionable quality shall meet limits of the comparison tests with distilled water in accordance with AASHTO T 26. The chloride concentration of water used in mixing and curing of Portland cement will be determined in accordance with ASTM D 512 and shall not have a chloride concentration exceeding 1000 ppm.

2. Portland Cement

   Portland cement shall meet the requirements of AASHTO M 85 with the fineness determined in accordance with AASHTO T 153 and the time of setting determined in accordance with AASHTO T 131.

3. Masonry Cement

   Masonry cement shall meet the requirements of AASHTO M 150 except the water retention and staining tests are waived.

4. Mortar Sand

   Mortar sand shall meet the requirements of AASHTO M 45 deleting the requirements for fineness modulus and deleterious substances.

5. Hydrated Lime for Finishing

   Hydrated lime for finishing shall meet the chemical requirements of ASTM C 206.

6. Hydrated Lime for Masonry

   Hydrated lime for masonry shall meet the chemical requirements of ASTM C 207, Type N.

7. Admixture

   Only as approved by the Engineer.

04100.03 EXECUTION

A. Mix Requirements

1. Mortar for Masonry

   Mortar used for masonry shall be composed in accordance with one of the following:

   a. one part Portland cement, three parts mortar sand by dry loose volume, and hydrated lime not to exceed 20% of the cement by weight;

   b. one part masonry cement and three parts mortar sand by dry loose volume;

   c. prepared bag mixes consisting of masonry cement and mortar sand. The prepared mixes shall produce a minimum compressive strength of 500 psi in 7 days when tested by the applicable procedures of AASHTO M 150.

      Pointing of masonry after the masonry has been laid shall not be permitted without the approval of the Engineer. The mortar used for pointing of masonry shall be composed of one part Portland cement, one part mortar sand by dry loose volume, and hydrated lime not to exceed 20% of the cement by weight.

2. Mortar for Pipe Connection

   Mortar used for pipe connections shall be composed in accordance with one of the following:

   a. one part Portland cement and two parts mortar sand by dry loose volume;

   b. prepared bag mixes consisting of Portland cement and mortar sand. The prepared mixes shall produce a minimum compressive strength of 1000 psi in 7 days when tested by the applicable procedures of AASHTO T 106.

3. Mortar for Grout

   Mortar used for grouting anchor bolts, pipe handrail posts, and miscellaneous items shall be composed in accordance with one of the following:

   a. one part Portland cement and one part mortar sand by dry loose volume;

   b. prepared bag mixes consisting of Portland cement and mortar sand. The prepared mixes shall produce a minimum compressive strength of 1000 psi in 7 days when tested by the applicable procedures of AASHTO T 106.

      Water shall be added in sufficient quantity to produce a fluid mixture.

4. Mortar for Precast Concrete Grade Ring

   Mortar for placing precast concrete grade rings shall be Type M, meeting requirements of ASTM C-270 and the mortar mix water shall consist of 3 parts water to 1 part Acrylic 60 liquid bonding agent as manufactured by Thoro Systems Products or equal.

B. Mixing

1. Mortar may be mixed in an approved mixing machine or manually in a tight box. The dry materials shall be mixed until the mixture assumes a uniform color. Water shall be added as the mixing continues until the proper consistency has been attained for the intended use.

2. Mortar shall be mixed only in quantities that satisfy immediate use. Mortar not used within 45 minutes after the water has been added shall be wasted. Retempering of mortar shall not be permitted.

04100.04 METHOD OF MEASUREMENT

Mortar will not be measured.

04100.05 BASIS OF PAYMENT

Mortar will not be paid for as a separate item but is considered incidental to other items of work. Payment will be included in other related items of work and will constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the required work.

END OF SECTION