

**SECTION 04100
MORTAR AND GROUT**

PART 1 GENERAL

1.1 REQUIREMENTS, CODES

- A. All applicable portions of Division 1 - General Requirements shall be considered as included with this section.
- B. The following are minimum requirements and shall govern except that all Federal, Local and/or State Codes and Ordinances shall govern when their requirements are in excess hereof.

1.2 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and other Division 1 Specifications Sections, apply to this Section.

1.3 SUMMARY

- A. The furnishing and placing of Mortar or Grout where indicated on the plans or within these specifications. The work shall include but not be limited to cleaning of surfaces and voids to be mortared or grouted, mixing of materials, pressure application as required, curing as required and related work.

1.4 SUBMITTALS

- A. Submit manufacturers data for non-shrink grout to Engineer for approval.

PART 2 PRODUCTS

- A. Mortar shall consist of one part Portland cement and two parts fine aggregate by volume. Hydrated lime may be added to the mix only as approved by the Engineer. The amount of lime shall not exceed four (4) pounds lime per bag of cement used. Water shall be clean and potable.
- B. Grout where non-shrink grout is called for on the Contract Drawings, it shall consist of one part cement and one part sand with sufficient potable water used to provide suitable workability, but shall not exceed 5 gallons per bag of cement. The grout shall be "SET" non-shrink grout by Master Builders, Inc. "Evapox Mortar Mix Product No. 3 by E.Poxy Industries, Inc. or approved equal. These compounds shall be used in strict accordance with the manufacturer's instruction.
- C. Grout and non-shrink grout mixes shall have a minimum 7 day compressive strength of 4500 psi when tested by methods conforming to ASTM C-109. The grout shall exhibit no shrinkage on setting, and be non-staining. Expansion of a maximum of 3 percent according to ASTM C-827 is allowed.
- D. Portland cement shall be Type I or II for mortar and grout and shall conform to ASTM Standard C-150. Type I conforming to the requirements of AASHTO M85 may be used for grout.
- E. Hydrated lime for mortar shall conform to requirements of ASTM C-6.

- F. Fine aggregate for non-shrink grout and for mortar to be used for laying stone and precast units shall conform to the requirements for fine aggregate in Division 3, "Cast-In-Place Concrete".
- G. Fine aggregate for mortar to be used in pointing stone or precast concrete units shall conform to the requirements in Division 3 "Concrete" except that gradation shall meet the following:

Square Mesh Sieves	Percent Passing By Weight
#16	100
#50	10-40
#100	0-10

PART 3 EXECUTION

- A. Conform to requirements stated in appropriate sections for which mortar or grout is required and with approved construction methods for placing mortar or grout.
- B. Clean the surfaces and voids to be mortared or grouted of all dirt, debris, deleterious substances, vegetable matter, loose mortar, brick and stones, and other material as ordered by the Engineer. The surfaces shall be clean, rough and sufficiently moist as required.
- C. Curing as required shall conform to Division 3 "Cast-In-Place Concrete".
- D. Water shall be drawn from the public water supply system, or equivalent water from some other source. In no case shall muddy water or water contaminated with material deleterious to the concrete be used.

Measure materials accurately by volume.

- E. Mix mortar or grout in amounts less than ¼ cu. Yd. in a suitable box on a tight platform, however never upon the pavement or ground.

The cement and sand for Mortar or grout shall be thoroughly mixed dry, until the mixture has a uniform color. Clean, fresh water shall then be added and the mass worked until a mixture, which is uniform and of the required consistency is produced. The mortar or grout shall be mixed in no greater quantity than is required for the work in hand, and any that has set sufficiently to require retempering shall not be used.

- F. Mix Ingredient materials for mortar or grout greater than ¼ cu. Yd. after measuring in an approved type mixture. Mixing shall be for a period of not less than 1-1/2 minutes at a rate of not less than 14 nor more than 22 RPM and shall continue until a homogeneous mixture is produced. The mortar or grout shall be kept constantly agitated until used.

The mixing and use of grout in freezing weather shall be subject to the same requirements as herein specified for mixing and placing concrete under similar conditions.

END OF SECTION 04100