SECTION 04 0513

MASONRY MORTARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Mortar for masonry.

B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section 04 2000 - Unit Masonry.
3. Section 04 7200 - Cast Stone.

1.2 REFERENCES

A. ASTM International (ASTM):
1. C91 - Standard Specification for Masonry Cement.
2. C144 - Standard Specification for Aggregate for Masonry Mortar.
3. C150 - Standard Specification for Portland Cement.
4. C199 - Standard Test Method for Pier Test for Refractory Mortar.
5. C207 - Standard Specification for Hydrated Lime for Masonry Purposes.
6. C270 - Standard Specification for Mortar for Unit Masonry.
7. C1329 - Standard Specification for Mortar Cement.

B. The Masonry Society (TMS):
1. 402 - Building Code for Masonry Structures.
2. 602 - Specification for Masonry Structures.

1.3 SUBMITTALS

A. Submittals for Review:
1. Samples: 1/2 x 1/2 inch x 3 inch long colored mortar samples.

B. Quality Control Submittals:
1. Test reports: Indicating mortar compliance with ASTM C270.
2. Delivery tickets: If mortar is delivered to site dry and pre-blended, furnish delivery tickets indicating quantity, mortar type, and date of manufacture.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with TMS 402 and 602.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver cement and lime in manufacturer's original, unopened packages or containers.

B. Protect materials from moisture absorption and damage; reject damaged containers.

C. Store aggregate to prevent inclusion of foreign matter.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers - Cement:
1. Essroc Cement Corp. (www.essroc.com)
2. LaFarge North America, Inc. (www.lafarge-na.com)
3. Lehigh Cement Co. (www.lehighcement.com)
4. Texas Industries, Inc. (www.txi.com)

B. Acceptable Manufacturers - Lime:
1. Chemical Lime Co. (www.chemicallime.com)
2. Graymont Dolime (OH) Inc. (www.graymont-oh.com)
3. Rockwell Lime Co. (www.rockwelllime.com)

C. Acceptable Manufacturers - Preblended Mortars and Grouts:
1. Quikrete Companies. (www.quikrete.com)

D. Acceptable Manufacturers - Colorants:
1. Arizona Oxides LLC. (www.arizonaoxides.com)
2. Davis Colors. (www.daviscolors.com)
3. Solomon Colors. (www.solomoncolors.com)

E. Substitutions: Materials specified above or equal.

2.2 MATERIALS

A. Portland Cement:
1. ASTM C150, Type I.
2. For exposed surfaces, provide cement from one source throughout project.

B. Aggregate:
1. ASTM C144, standard masonry type.
2. For exposed surfaces, provide aggregate from one source throughout project.

C. Lime: ASTM C207, Type S.

D. Colorant: Pure mineral oxide type; color to be selected from manufacturer's full color range.

E. Water: Clean and free from oils, acids, alkalies, organic matter, and other substances in amounts deleterious to mortar or metals in masonry.

2.3 MIXES

A. Mortar Mixes: To ASTM C270 using the Property Method.
1. Brick unit masonry: Type N, 750 PSI min, color to be selected by Owner.
2. Concrete unit masonry: Type S, 1900 PSI min. gray color.
3. Cast stone: Type N, color to be selected by Owner.

2.4 MIXING

A. Mix mortar in accordance with ASTM C270.

B. Jobsite Proportioning of Mortar:
1. Mix using mechanical mixer. Hand mixing not permitted.
2. Mix approximately three-quarters of required water, all of cement and lime, and one-half of aggregate for minimum of 2 minutes.
3. Add remainder of water and aggregate; mix for minimum of 3 minutes.

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C. Dry Pre-blended Mortar:
   1. Mix using continuous, self-cleaning mixer mounted at apex of silo cone.
   2. Set water flow valve to provide workable consistency.

D. Provide uniformity of color in exposed mortar.

E. Colorant may not exceed 9 pounds per 94 pound bag of cement for mineral oxides.

F. Thoroughly mix ingredients in quantities needed for immediate use.

G. Discard lumpy, caked, frozen, and hardened mixes.

H. Mortar may be re-tempered by adding water as required. Use mortar within 2-1/2 hours after initial mixing at ambient temperatures below 80 degrees F and within 1-1/2 hours after initial mixing at ambient temperatures over 80 degrees F.

I. Do not add accelerators, retarders, water repellents, antifreeze compounds, or other additives without Architect's approval.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Follow requirements specified in referenced sections.

END OF SECTION