

SECTION 04 05 31
MASONRY TUCK POINTING

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies requirements for tuck pointing of existing masonry and stone work. For the purpose of this project,

1.2 RELATED WORK

Mortars: Section 04 05 13, MASONRY MORTARING.

1.3 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - C67-07Brick and Structural Clay Tile, Sampling and Testing
 - C216-07Facing Brick (Solid Masonry Units Made From Clay or Shale)
 - C270-07Mortar for Unit Masonry
- C. International Masonry Institute: Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.
- D. National Park Service, *Preservation Brief 2: Repointing Mortar Joints in Historic Masonry Buildings*, (1998).

1.4 SUBMITTALS

- A Qualifications: Submit documentation which verifies qualifications of masonry subcontractor, their site supervisors and craftsmen. Those performing and supervising the Work should have at least 5 years' experience in historic masonry work, or 5 significant historic masonry preservation projects.
- B At the beginning of the project, provide chemical analysis for up to three mortar samples to be taken at locations as determined in consultation with the Architect. Submit test results to Architect. The sampling of the existing mortar and analysis by the approved laboratory is to be procured

and paid for by the Contractor and included in the pricing for this part of the work. In addition to composition, the new mortar must match the historic in color, composition, and joint profile.

C Mortar Mixes: Submit mixes and product data for each type of mortar to be used.

D Product Data: Submit data on cleaning solutions.

E Samples:

1. Submit samples of each type of replacement stone required to match existing to remain. Submit three units for each type which illustrate size, color, texture, and extremes of color range.

2. Mortar sample: Submit, for verification and approval, a sample of each type of mortar used, in form of 6" long by 1/2" wide sample strips of mortar set in aluminum or plastic channels.

F Product Data: Required.

G Samples: Required.

H Manufacturer's Certificate: Required

1.5 QUALIFICATIONS

A Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.

B. Installer: Company and designated personnel specializing in performing Work of this section with minimum of 5 years documented experience with each required procedure, and with historic buildings masonry restoration. Refer to submittal requirements

1.6 MOCK-UP

A Mock-up requirements:

1. Initially perform sample joint raking and repointing on a designated portion of a masonry wall sized 1'-6" long by 1'-6" high as approved by the architect.

2. Demonstrate proficiency with joint raking tools and ability to not damage masonry units with either hand or power tools.
 3. Mix and cure test batch of repointing mortar and place in joints; repeat test mix until mortar color is approved. Test mortar should be matched, dried and approved before placing in joints.
 4. Clean the mock-up area to determine extent of cleaning, methods, and cleaning products required.
 5. Repeat, up to three different panels as requested, for both repointing and cleaning condition, until acceptable.
- B Propose mock-up locations to Architect and Owner for approval.
- C Acceptable panels and methods of procedure will become the standard for work of this section.

PART 2 - PRODUCTS

2.1 TUCK POINTING MORTAR

As per mortar specifications.

2.2 REPLACEMENT MASONRY UNITS

B. Units to match existing.

PART 3 - EXECUTION

3.1 CUT OUT OF EXISTING MORTAR JOINTS

A. Cut out existing mortar joints (both bed and head joints) and remove by means of a toothing chisel or a special pointer's grinder, to a uniform depth of to 51 to 76 mm (2 to 3 inches).

Take care to not damage edges of existing masonry units to remain.

- B. Remove dust and debris from the joints by brushing, blowing with air or rinsing with water. Do not rinse when temperature is below freezing.

3.2 JOB CONDITIONS

- A. Protection: Protect newly pointed joints from rain, until pointed joints are sufficiently hard enough to prevent damage.
- B. Cold Weather Protection:
 - 1. Tuck pointing may be performed in freezing weather when methods of protection are utilized.
 - 2. Comply with applicable sections of "Recommended Practices for Cold Weather Construction" as published by International Masonry Industry All Weather Council.
 - 3. Existing surfaces at temperatures to prevent mortar from freezing or causing other damage to mortar.

3.3 INSTALLATION OF TUCK POINTING MORTAR

- A. Immediately prior to application of mortar, dampen joints to be tuck pointed. Prior to application of pointing mortar, allow masonry units to absorb surface water.
- B. Tightly pack mortar into joints in thin layers, approximately 6 mm (1/4-inch) thick maximum.
- C. Allow layer to become "thumbprint hard" before applying next layer.
- D. Pack final layer flush with surfaces of masonry units. When mortar becomes "thumbprint hard", tool joints.

3.4 TOOLING OF JOINTS

- A. Tool joints with a jointing tool to produce a smooth, compacted, joint that matches the historic joints in profile.
- B. Tool joints in patch work with a jointing tool as approved by the Resident Engineer.

3.5 REPLACEMENT OF MASONRY UNITS

- A. Cut out mortar joints surrounding masonry units that are to be removed and replaced.

1. Units removed may be broken and removed, providing surrounding units to remain are not damaged.
 2. Once the units are removed, carefully chisel out the old mortar and remove dust and debris.
- B. Dampen surfaces of the surrounding units before new units are placed.
1. Allow existing masonry to absorb surface moisture prior to starting installation of the new replacement units.
 2. Butter contact surfaces of existing masonry and new replacement masonry units with mortar.
 3. Center replacement masonry units in opening and press into position.
 4. Remove excess mortar with a trowel.
 5. Point around replacement masonry units to ensure full head and bed joints.
 6. When mortar becomes "thumbprint hard", tool joints.

3.6 CLEANING

- A. Clean exposed masonry surfaces on completion.
- B. Remove mortar droppings and other foreign substances from wall surfaces.
- C. First wet surfaces with clean water, then wash down with a solution of soap less detergent specially prepared for cleaning brick.
- D. Brush with stiff fiber brushes while washing, and immediately thereafter hose down with clean water. No wire brushes to be used for cleaning.
- E. Free clean surfaces from traces of detergent, foreign streaks or stains. Protect materials during cleaning operations including adjoining construction.
- F. Use of muriatic acid for cleaning is prohibited.

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