

**SECTION 04 01 00
MAINTENANCE OF MASONRY**

SPEC WRITER NOTE:

1. Section number and title were revised from previous Section 04 05 01, MASONRY TUCK POINTING. Coordinate references within other affected sections.
2. Delete text between // _____ // not applicable to project. Edit remaining text to suit project.

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:

SPEC WRITER NOTE:

1. Edit descriptions for specific masonry types such as brick, CMU, and stone, requiring repointing and repairing.
2. Ensure drawings show location and extent for repointing and replacement.

1. Repointing existing // damaged // masonry joints.
2. Replacing existing // damaged // masonry units.

1.2 RELATED REQUIREMENTS

SPEC WRITER NOTE: Update and retain references only when specified elsewhere in this section.

- A. Mortars for new masonry: Section 04 05 13, MASONRY MORTARING.

1.3 APPLICABLE PUBLICATIONS

- A. Comply with references to extent specified in this section.
- B. ASTM International (ASTM):
1. C67-14 - Sampling and Testing Brick and Structural Clay Tile.
 2. C144-11 - Aggregate for Masonry Mortar.
 3. C150/C150M-15 - Portland Cement.
 4. C207-06(2011) - Hydrated Lime for Masonry Purposes.
 5. C216-15 - Facing Brick (Solid Masonry Units Made from Clay or Shale).
 6. C270-14a - Mortar for Unit Masonry.
 7. C295/C295M-12 - Petrographic Examination of Aggregates for Concrete.

1.4 SUBMITTALS

- A. Submittal Procedures: Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
 - 1. Description of each product.
 - 2. Replacement units indicating manufacturer recommendation for each application.
- C. Samples:
 - 1. Pointing Mortar: Molded, 150 mm (6 inches) long for each type, texture, and color.
- D. Test reports:
 - 1. Preconstruction test results of existing masonry mortar and units.
 - 2. Recommended mortar mix and mortar materials sources.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications:
 - 1. Documented experience in completion of work, similar in design, material, and extent specified.
- B. Preconstruction Testing:
 - 1. Existing Brick: according to ASTM C67.
 - 2. Existing Mortar: according to ASTM C295/C295M.
 - a. Recommend mortar mix compatible with existing // and mortar material sources required to match existing color and texture //.

SPEC WRITER NOTE: Ensure mockup is indicated on drawings.

- C. Mockups: Prepare mockup in size indicated on Drawings, demonstrating quality and aesthetics of // tuck pointing // masonry unit replacement // and cleaning //.

1.6 DELIVERY

- A. Deliver products in manufacturer's original sealed packaging.
- B. Mark packaging, legibly. Indicate manufacturer's name or brand, type, // color, // production run number, and manufacture date.
- C. Before installation, return or dispose of products within distorted, damaged, or opened packaging.

1.7 STORAGE AND HANDLING

- A. Store materials covered, protected from weather, and elevated above grade.
 - 1. Prevent contamination of aggregates.
- B. Protect products from damage during handling and construction operations.

1.8 FIELD CONDITIONS

- A. Environment:
 - 1. Cold Weather Requirements: Maintain mortar ingredients and substrate within temperature range between 4 degrees C (40 degrees F) and 49 degrees C (120 degrees F) when outside temperature is less than 4 degrees C (40 degrees F).
 - 2. Hot Weather Requirements: Protect mortar-joint from evaporation of moisture from mortar material. When required, provide adequately shaded work area.

1.9 WARRANTY

SPEC WRITER NOTE: Always retain construction warranty. FAR includes Contractor's one year labor and material warranty.

- A. Construction Warranty: FAR clause 52.246-21, "Warranty of Construction."

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Mortar Components:
 - 1. Hydrated Lime: ASTM C207, Type S.
 - 2. Aggregate: ASTM C144.
 - 3. Portland Cement: ASTM C150/C150M, Type I.
 - 4. Water: Potable, free of substances that are detrimental to grout, masonry, and metal.

2.2 PRODUCTS - GENERAL

SPEC WRITER NOTE: Ensure mortar color selection is included in Section 09 06 00, SCHEDULE FOR FINISHES.

- A. Basis of Design: Section 09 06 00, SCHEDULE FOR FINISHES.

- B. Provide each product from one manufacturer // and from one production run //.

2.3 REPLACEMENT MASONRY UNITS

- A. Face Brick:

SPEC WRITER NOTE: Edit face brick grade and type when required to match existing.

1. ASTM C216, // Grade SW, Type FBS // matching existing //.
2. Efflorescence: Rated slight efflorescent when tested according to ASTM C67.

SPEC WRITER NOTE: Identify product requirements for other masonry units when known.

- B. Other Masonry Units: Match existing.

2.4 MIXES

SPEC WRITER NOTE: Select mortar as recommended by preconstruction testing to be softer than existing mortar.

- A. Tuck Pointing Mortar: ASTM C270; // Appendix X3. //

SPEC WRITER NOTE: Select required mortar type. ASTM C270 defines Type N and Type O mortar. ASTM C270 Appendix X3 defines Type K mortar. Only Portland cement is permitted for Type K mortar.

1. // Type N // Type O // Type K //.

SPEC WRITER NOTE: Brick Industry Association Tech Note 46 defines Type K mortar as follows.

2. // Type K: 1 part Portland cement, 4 parts hydrated lime and 11-1/4 to 15 parts fine sand. //

2.5 ACCESSORIES

SPEC WRITER NOTE: Edit detergent to suit required masonry type.

- A. Cleaning Agent: Soapless, non-acidic, detergent, specially prepared for cleaning // brick // stone // concrete // masonry.

PART 3 - EXECUTION**3.1 PREPARATION**

- A. Examine and verify substrate suitability for product installation.
- B. Protect existing construction and completed work from damage.
 - 1. Protect from mortar droppings and cleaning operations.
- C. Remove existing fixtures and fittings concealing masonry joints to permit repointing and repair.

3.2 EXISTING MORTAR JOINTS

- A. Cut out existing bed and head mortar joints, to uniform depth of 19 mm (3/4 inches), or to sound mortar without damaging edges and faces of existing masonry units to remain.
- B. Remove dust and debris from joints.
 - 1. Do not rinse when temperature is below freezing.

3.3 TUCK POINTING

- A. Dampen joints immediately before tuck pointing. Allow masonry units to absorb surface water.
- B. Tightly pack tuck pointing mortar into joints in thin layers, 6 mm (1/4 inch) thick, maximum.
- C. Allow layer to become slightly hardened before applying next layer.
- D. Pack final layer flush with surfaces of masonry units.

3.4 MASONRY UNIT REPLACEMENT

- A. Cut out mortar joints surrounding masonry units requiring replacement.
 - 1. Remove existing masonry units creating opening for replacement masonry unit installation.
 - 2. Remove mortar, dust, and debris from opening perimeter surfaces.

SPEC WRITER NOTE: Retain the following paragraph for cavity wall and veneer construction repair.

- 3. Prevent debris from falling into cavity.
 - B. Dampen surfaces of surrounding existing masonry before installing replacement masonry units.
 - 1. Allow existing masonry to absorb surface moisture before installing replacement units.
 - 2. Butter contact surfaces of existing masonry and replacement masonry units with mortar.
 - 3. Center replacement masonry units in opening and press into position.

4. Remove excess mortar.
5. Tuck point replacement masonry units to ensure full head and bed joints.

3.5 JOINT TOOLING

- A. Tool // repointed // and // replaced masonry // joints when mortar becomes slightly hardened.
- B. Produce smooth, compacted, // concave joint // joint matching existing //.

3.6 CLEANING

- A. Remove mortar splatter from exposed surfaces immediately.
- B. Clean exposed masonry surfaces on completion.
- C. Remove mortar droppings and other foreign substances from wall surfaces.
- D. Wet surfaces with clean water.
- E. Wash with cleaning agent.
- F. Brush masonry surfaces with stiff fiber brushes while washing.
- G. Immediately after washing, rinse with clean water.
 1. Remove traces of detergent, foreign streaks or stains.

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