

**SECTION 04 20 00
UNIT MASONRY**

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies requirements for construction of masonry unit walls.

1.2 RELATED WORK

- A. Mortars and grouts: Section 04 05 13, MASONRY MORTARING, Section 04 05 16, MASONRY GROUTING.
- B. Flashing: Section 07 60 00, FLASHING AND SHEET METAL.
- C. Sealants and sealant installation: Section 07 92 00, JOINT SEALANTS.

1.3 SUBMITTALS

- A. Provide sample of savaged brick and proposed mortar joints in inconspicuous subject area of building. Sample area shall be reviewed by VA and SHPO or their authorized representative prior to full execution of work on building.
- B. Use sample panels reviewed by SHPO and approved by Resident Engineer for standard of workmanship of new masonry work.

1.5 WARRANTY

Warrant exterior masonry walls against moisture leaks for a period of five years.

1.6 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A951-06.....Steel Wire for Masonry Joint Reinforcement.
 - C126-10.....Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
 - C216-10.....Facing Brick (Solid Masonry Units Made From Clay or Shale)
 - C476-10.....Standard Specification for Grout for Masonry
- C. Masonry Industry Council:
 - Hot and Cold Weather Masonry Construction Manual-98 (R2000).
- D. Federal Specifications (FS):
 - FF-S-107C-00.....Screws, Tapping and Drive
- E. Brick Industry Association - Technical Notes on Brick Construction (BIA):
 - 11-2001.....Guide Specifications for Brick Masonry, Part I
 - 11A-1988.....Guide Specifications for Brick Masonry, Part II

11B-1988.....Guide Specifications for Brick Masonry, Part III
Execution

11C-1998.....Guide Specification for Brick Masonry Engineered
Brick Masonry, Part IV

11D-1988.....Guide Specifications for Brick Masonry
Engineered Brick Masonry, Part IV continued

F. Masonry Standards Joint Committee; Specifications for Masonry Structures
TMS 602-08/ACI 530.1-08/ASCE 6-08 (2008 MSJC Book Version TMS-0402-08).

PART 2 - PRODUCTS

2.1 BRICK

A. Reclaimed / salvaged brick to match existing building

2.2 ANCHORS, TIES, AND REINFORCEMENT

A. Multiple Wythes and Cavity wall ties:

- a. Reinforce replacement masonry units into existing wall as required for secure anchoring and water-tight condition

B. Individual ties:

- 1. Rectangular ties: Form from 5 mm (3/16 inch) diameter galvanized steel rod to a rectangular shape not less than 50 mm (2 inches) wide by sufficient length for ends of ties to extend within 25 mm (1 inch) of each face of wall. Ties that are crimped to form drip are not permitted.

C. Ridge Wall Anchors:

- 1. Form from galvanized steel not less than 25 mm (1 inch) wide by 5 mm (3/16 inch) thick by 600 mm (24 inches) long, plus 50 mm (2 inch) bends.
- 2. Other lengths as shown.

2.6 PREFORMED COMPRESSIBLE JOINT FILLER

A. Thickness and depth to fill the joint as specified.

B. Closed Cell Neoprene: ASTM D1056, Type 2, Class A, Grade 1, B2F1.

C. Non-Combustible Type: ASTM C612, Class 5, 1800 degrees F.

2.7 ACCESSORIES

A. Weep Hole Wicks: Glass fiber ropes, 10 mm (3/8 inch) minimum diameter, 300 mm (12 inches) long.

B. Masonry Cleaner:

- 1. Detergent type cleaner selected for each type of masonry used.
- 2. Acid cleaners are not acceptable.
- 3. Use soapless type specially prepared for cleaning brick.

C. Fasteners:

- 1. Concrete Nails: ASTM F1667, Type I, Style 11, 19 mm (3/4 inch) minimum length.

2. Masonry Nails: ASTM F1667, Type I, Style 17, 19 mm (3/4 inch) minimum length.
3. Screws: FS-FF-S-107, Type A, AB, SF thread forming or cutting.

PART 3 - EXECUTION

3.1 JOB CONDITIONS

A. Protection:

1. Cover tops of walls with nonstaining waterproof covering, when work is not in progress. Secure to prevent wind blow off.
2. On new work protect base of wall from mud, dirt, mortar droppings, and other materials that will stain face, until final landscaping or other site work is completed.

B. Cold Weather Protection:

1. Masonry may be laid in freezing weather when methods of protection are utilized.
2. Comply with MSJC and "Hot and Cold Weather Masonry Construction Manual".

3.2 INSTALLATION GENERAL

- A. Keep finish work free from mortar smears or spatters, and leave neat and clean.
- B. Anchor masonry as specified in Paragraph 3.4 ANCHORAGE.
- C. Tooling Joints:
 1. Do not tool until mortar has stiffened enough to retain thumb print when thumb is pressed against mortar.
 2. Tool while mortar is soft enough to be compressed into joints and not raked out.
 3. Finish joints in to match existing adjacent historic profile.
- D. Before installing new masonry, remove loose masonry or mortar, and clean and wet work in place.

3.3 ANCHORAGE

A. Anchorage of Abutting Masonry:

1. Anchor replacement masonry units to existing masonry construction, with corrugated wall ties. Extend ties at least 100 mm (4 inches) into joints of new masonry. Fasten to existing concrete and masonry construction, with powder actuated drive pins, nail or other means that provides rigid anchorage.

3.4 BRICKWORK

A. Solid Exterior Walls:

1. Clean wall surfaces to receive parging of dirt, oil, or grease and moisten before application of first coat.

2. Roughen first coat when partially set, permit to hardened for 24 hours, and moisten before application of second coat.
3. Keep second coat damp for at least 48 hours.

3.5 POINTING

- A. At joints with existing work match existing joint.

3.6 CLEANING AND REPAIR

A. General:

1. Clean exposed masonry surfaces on completion.
2. Protect adjoining construction materials and landscaping during cleaning operations.
3. Cut out defective exposed new joints to depth of approximately 19 mm (3/4 inch) and repoint.
4. Remove mortar droppings and other foreign substances from wall surfaces.

B. Brickwork:

1. First wet surfaces with clean water then wash down with a solution of soapless detergent. Do not use muriatic acid.
2. Brush with stiff natural fiber brushes while washing and immediately thereafter hose down with clean water.
3. Free clean surfaces of traces of detergent, foreign streaks, or stains of any nature.

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