

SECTION 042000 - UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL

1.1 Design according to latest applicable building codes (including IBC, Chapter 21, as per WV state law).

A. Design to prevent efflorescence in masonry walls.

1.2 Submittals

A. Product Data: For each type of product indicated.

B. Samples for Verification: For each type and color of the following:

1. Concrete masonry units.
2. Pre-faced concrete masonry units.
3. Brick.
4. Pigmented or colored-aggregate mortar. Delete first subparagraph below if stone trim is not used.
5. Stone trim.
6. Weep holes/vents.
7. Accessories embedded in masonry.

C. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification.
2. Include test reports for grout mixes required to comply with compressive strength requirement.

D. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Table 21-D in the Uniform Building Code and(?) Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.

E. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.3 Quality Assurance

A. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

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- B. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build mockups for each type of unit masonry construction in sizes approximately 48 inches long by 48 inches high by full thickness, including face and backup wythes and accessories.
 - a. Include a sealant-filled joint at least 16 inches long in each exterior wall mockup.
 - b. Include flashing, weep holes, anchors, etc. in unit masonry wall mockup.
 - 2. Approval of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; and aesthetic qualities of workmanship.
 - a. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
 - b. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.4 Delivery, Storage, and Handling

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

PART 2 - PRODUCTS

2.1 Masonry Units, General

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

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- 2.2 Consideration for matching other masonry units nearby, on the same campus or elsewhere at WVU should be considered in design reviews.
- A. Source for Evansdale white brick: Central Supply (Chris Foy),
- 2.3 Masonry Construction Materials: See Chapter 21, IBC.
- 2.4 Mortar and Grout Materials
- A. See Chapter 21, IBC.
- 2.5 Reinforcement
- A. See Chapter 21, IBC.
- 2.6 Ties and Anchors
- A. See Chapter 21, IBC.
- 2.7 Mortar and Grout Mixes
- A. See Chapter 21, IBC.
- 2.8 Source Quality Control
- A. Contractor will engage a qualified independent testing agency to perform source quality-control testing indicated below:
1. Payment for these services will be made by the contractor.
 2. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.
- B. Clay Masonry Unit Test: For each type of unit furnished, per ASTM C 67 and Chapter 21, IBC.
- C. Concrete Masonry Unit Test: For each type of unit furnished, per ASTM C 140 and Chapter 21, IBC.

PART 3 - EXECUTION

- 3.1 Installation, General
- A. Install in accordance with Chapter 21, IBC.

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3.2 Control and Expansion Joints

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
 - 1. Form control joints in concrete masonry.
 - 2. Form expansion joints in brick.
 - 3. Provide horizontal, pressure-relieving joints.

3.3 Lintels

- A. Install in accordance with Chapter 21, IBC.
- B. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.4 Flashing, Weep Holes, Cavity Drainage, and Vents

- A. Install in accordance with Chapter 21, IBC.

3.5 Field Quality Control

- A. Inspectors: Owner will engage qualified independent inspectors to perform inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
- B. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections indicated below and prepare test reports:
 - 1. Payment for these services will be made by Owner.
 - 2. Retesting of materials failing to comply with specified requirements shall be done at Contractor's expense.
- C. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.
- D. Mortar Test: For each mix provided, per ASTM C 270 and IBC Chapter 21.
- E. Grout Test (Compressive Strength): For each mix provided, per IBC Chapter 21.
- F. Prism Test: For each type of construction provided, per IBC Chapter 21.

END OF SECTION 04810