

MASONRY

PART 1 – GENERAL

- 1.01 **Summary:** This section describes University specific requirements for brick masonry and concrete masonry units. It is intended to guide and supplement the specifications provided by the Architect and Engineer of Record.
- 1.02 **Related Work:** Related work located elsewhere includes: waterproofing, pre-cast concrete, and masonry pavers.
- 1.03 **Use of masonry materials:** Masonry materials are preferred as the main components for the building envelope. Refer to traditional details and treatments described further in the Appendix of this document: “Architectural Design – Master Plan Element”.
- 1.04 **Quality Control:**
- A. All material products and execution shall conform to the current ACI specifications and applicable ASTM Standards tests. In addition, materials shall conform to the requirements of the Quality Control Standards of the National Concrete Masonry Association.
 - B. Testing shall also comply with the requirements of the FSU Professional Services Guide.
 - C. Mock-up: Provide a 4’x4’ sample panel of finished masonry assembly for approval by the University Project Manager prior to proceeding. At a minimum, provide mock-ups demonstrating the following:
 - 1. joints and reinforcement
 - 2. flashing and waterproofing
 - 3. mortar and grouting
 - 4. bond pattern
 - 5. color range and texture of masonryThe mock-up panel shall remain in place until masonry acceptance and shall act as the minimum standard for the work.
 - D. Drip edges and positive drainage should be employed to keep water from collecting on horizontal surfaces and discoloring surfaces.

PART 2 – MATERIALS

- 2.01 **Concrete Masonry Units:** Concrete masonry units are preferred for construction of building envelope walls, in lieu of, stud wall construction.
- 2.02 **Brick:** Face brick should be 7 5/8” x 3 5/8” x 2 1/4” standard units unless approved otherwise by the Facilities Project Manager. Colors shall consistent with existing Campus brick palette. Brick proposed for historic brickwork must be approved by the University for both type and color, and it must conform to the Secretary of Interiors Standards for color, texture, pattern, bond, and size.
- 2.03 **Mortar:** Provide mortar color consistent with existing gray mortars previously used on Campus.

- 2.04 **Glass Unit Masonry:** The use of glass unit masonry on the building exterior must be approved by the Facilities Project Manager prior to incorporation in construction documents. Use on the building envelope should be limited to small quantities and employ appropriate waterproofing. When utilized, include horizontal joint reinforcement, uniform joint treatment interface with adjacent wall systems, and compliance with strict structural and all other code requirements.
- 2.05 **Waterproofing:** Utilize through wall flashing, treated weeps, and waterproof coatings. Do not rely on exterior surface applied water repellants.
- 2.06 **Wall Expansion/Control Joints:** Specify filler and sealant as required to provide watertight construction and allow for expansion. Joints should be straight and aesthetically pleasing where exposed to view.

PART 3 – EXECUTION

- 3.01 Masonry which is stored on site shall be protected to ensure that damage does not occur causing staining, chipping, or cracks.
- 3.02 Lay concrete masonry as follows:
- A. Provide full mortar coverage on horizontal and vertical face shells.
 - B. Embed webs in mortar in starting course on footings and in all courses of piers, columns and pilasters, and where adjacent to cells and cavities to be filled with grout.
 - C. Fill all below grade cells with grout.
 - D. Maintain joint widths indicated, with only minor variations in order to maintain bond alignment, typically 3/8" (10 mm) joints.
- 3.03 Lay solid brick masonry units as follows:
- A. Completely fill bed and head joints, butter ends with sufficient mortar to fill bed and head joints and shove into place. Do not furrow bed joints or slush head joints.
 - B. Slope beds toward cavity in cavity walls to minimize mortar protrusion into cavity. Use a drag stick to keep cavity clear of mortar and trowel mortar protrusion flat against cavity face of brick.
- 3.04 Lay hollow brick masonry as follows:
- A. Lay vertical cell units with full head joints, unless otherwise indicated.
 - B. Provide bed joints with full mortar coverage on face shells and webs.
 - C. Lay horizontal cell units with full bed joints, unless otherwise indicated.
 - D. Keep drainage channels, if any, free of mortar.
 - E. Form head joints with sufficient mortar so excess will be squeezed out as units are placed in position.
 - F. Butter both sides of units to be placed.
 - G. Maintain joint widths indicated, except for minor variations required to maintain bond alignment, 1/4"-3/8" (6-10 mm) unless otherwise noted.
- 3.05 Tool all exposed joints slightly concave when thumbprint hard, using a joint tool larger than the joint.

- 3.06 Cut joints flush for masonry walls that are to receive waterproofing or other direct applied finishes (other than paint), unless otherwise indicated.
- 3.07 Plasticizers, accelerators, retardants, water repellent agents, or other admixtures are not recommended for mortar unless specifically required and approved by the University Project Manager.
- 3.08 Tops of all masonry walls, exterior and interior, where applicable, shall be built tightly against the floor construction above for stability, fire, and sound protection. Where provision must be made for expansion, require alternative means for ensuring stability and other protections. Provide anchor sizes and spacing in project specifications.
- 3.09 Provide concrete block units wherever feasible for interior wall finish. All units shall comply with all structural codes and shall be properly protected at the job site to insure placing in the wall without excessive moisture content.
- 3.10 All walls exposed both sides shall be 6" thick minimum.
- 3.11 Provide bullnose on all exposed external concrete block corners that extend to the floor (or to top of base). Rub out all casting irregularities (so as to result in smooth transitions from flat face to rounded corner) before any finish treatment is applied.
- 3.12 Provide a weep cavity where concrete blocks are veneer faced with brick or precast units. Face units shall not be installed directly against outer face of interior wythe. The exterior facing shall be tied to the interior wythe with ties specifically designed for this purpose. A damproof coating shall be provided on the outer face of the interior wythe prior to installing the facing.
- 3.13 Check split coursing at the head of any type opening.
- 3.14 All brick shall be laid with modular coursing, three courses to 8", unless otherwise required to match existing coursing or to accentuate an architectural feature or pattern. ASTM standard shall be complied with for all face brick, Grade SW, Type FBS. In addition, manufacturer's certification will be required stating that the rating for effervescence is not more than "slightly effervesced" in accordance with ASTM.
- 3.15 Show location of control joints in construction drawings. Locate joints to minimize cracking.
- 3.16 **Masonry Cleaning:** Refer to the Southern Brick and Tile Manufacturing Association for bulletins concerning cleaning. Cleaning should be done sufficiently early for the walls to dry thoroughly, at least four weeks prior to application of silicone or other recommended waterproofing. Sandblasting is not recommended for bricks, terracotta, or ceramic finished material. Specify that brickwork, especially historic brick or stonework, must be inspected prior to application of waterproofing. Specify cleaning agents consisting of detergent or solvent. Specification of acid solutions is not recommended and **MUST** be approved by the FSU Project Manager prior to use.

END OF SECTION