

# Louisiana State University Design Standards

## DIVISION 04 – MASONRY

### 1 GENERAL

- 1.1 Standards - All new brick work including, but not limited to, expansion joints, ties and fasteners and accessories shall conform to standards of the Brick Institute of America.
- 1.2 A sample brick panel of 100 face brick selected for the project shall be laid up with specified jointing for approval by the Designer and University prior to starting exterior face brick installation.
  - 1.2.1 Install 4 foot high by 6 foot wide panel illustrating pattern, bond, and blend of colors for Architect's approval of masonry materials prior to ordering all materials. Mock-up should accurately portray the color, blend, and size of brick that will be sent to the jobsite.
  - 1.2.2 After all brick has been sent to the jobsite, construct a second mock-up wall size as necessary to incorporate examples of ALL conditions pertinent to the project; include bonding patterns, colored mortars, finished joint tooling, back-up construction, expansion joints & control joints (with sealant & backer rod), corners, headers, sills, horizontal reinforcing, anchorage to back-up construction, thru-wall flashing, cavity insulation, weeps, and any other special conditions for the project into masonry panel. The purpose of the sample panel is for the Contractor to show his understanding of all aesthetic and technical criteria related to masonry work for the Architect's approval prior to initiating actual work on the project. Masonry Work should not commence until the Architect and Owner have issued approval of the mock- up. Mock-up may remain as part of work if accepted.
- 1.3 Should the initial sample panel be unsatisfactory, the Contractor will be required to erect additional samples until the brick work and jointing are approved by both the Designer and University.

### 2 UNIT MASONRY

- 2.1 The predominant and preferred brick on campus is Bengal Blend Modular manufactured by Cherokee Brick and Tile Company, Jackson, MS. Any other brick selection must be approved by the Planning, Design & Construction department. Additions shall match existing brick in color and texture.
- 2.2 The University has also approved St. Joe Light Tan or Rose Blend brick where appropriate to match existing.
- 2.3 Coursing - New brickwork, which is adjacent to or an addition to existing brickwork, shall be coursed to match the existing brickwork.
- 2.4 Cavity Walls - Cavity walls shall be detailed and specified to keep cavities free of mortar and the Designer's field representative shall enforce this requirement. There are several strategies available to keep mortar out of the cavity that does not require extraordinary masonry skills. Brick ties shall be specified with built-in drips to avoid water bridging the cavity.
- 2.5 Flashings - Flashings shall be carefully thought out and positioned. Extend beyond openings and specify dams. Coordinate and detail the interface between below grade waterproofing and through-wall flashing, as well as base flashing and weeps.
- 2.6 Weep holes - Weeps are preferred to be an open head joint rather than cords or tubes. Locate them far enough above adjacent roofs to allow reproofing without interfering with their operation. Weep holes on exterior walls shall extend the full height of the brick head joint and be a minimum of 24" on center.
- 2.7 Expansion and Control Joints - Expansion joints and expansion joint spacing shall strictly conform to the Brick Institute of America.
- 2.8 Mortar Joints - Mortar joints shall be tooled slightly concave. Struck or raked joints shall not be used in exterior walls. Exception: Joints in historic buildings shall match the existing ones.
- 2.9 Reinforcement, Ties and Anchors: Reinforcement, ties and anchors shall strictly conform to the American Concrete Institute, the American Society of Civil Engineers and the Masonry Society.
- 2.10 All new exterior brick or exposed aggregate finishes shall be sealed with a clear silane or silicone waterproofing solution. Windows, doors, and shrubbery shall be covered during the application. Provide a minimum 10 year manufacturer's warranty.
- 2.11 Due to potential rusting, brick veneer wall shall have CMU back up interior wall and not metal studs.

- 2.12 Air space between brick and wall shall be a minimum of 1 ½”.
- 2.13 Glazed brick or ceramic tile on restroom walls: A minimum of five feet high is preferred.
- 2.14 Copper wall flashing: A minimum of 5 oz. shall extend below the entire width of the brick.
- 2.15 Bricks used for paving shall be of a grade designated as suitable for ground contact.
- 2.16 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 and ensure that they are securely tied. If units become wet, do not install until they are dry.

### **3 COPING STONES**

- 3.1 Thru-wall flashing shall be installed beneath all coping stone installations.

### **4 MASONRY & STONE RESTORATION**

- 4.1 Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on masonry units as follows.
  - 4.1.1 Existing Brick and Cast Stone. Test each type of existing masonry unit indicated for replacement, according to testing methods in ASTM C 67 for compressive strength, 24- hour cold-water absorption, 5-hour boil absorption, saturation coefficient, and initial rate of absorption (suction). Carefully remove five existing units from locations designated by Architect. Take testing samples from these units.
  - 4.1.2 Existing Mortar: Test according to ASTM C 295, modified as agreed by testing service and Architect for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Use X-ray diffraction, infrared spectroscopy, and differential thermal analysis as necessary to supplement microscopical methods. Carefully remove existing mortar from within joints at five locations designated by testing service.
  - 4.1.3 Temporary Patch: As directed by Architect, provide temporary materials at locations from which existing samples were taken.
  - 4.1.4 Replacement Brick and Cast Stone: Test each proposed type of replacement unit, according to sampling to sampling and testing methods in ASTM C 67 for compressive strength, 24-hour cold-water absorption, 5-hour boil absorption, saturation coefficient, and initial rate of absorption (suction).
- 4.2 Restoration Specialist Qualifications: Engage an experienced, preapproved masonry restoration and cleaning firm to perform work of this Section. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance. Experience installing standard unit masonry is not sufficient experience for masonry restoration work.