SECTION 04200 - UNIT MASONRY

Include the following information into specifications prepared for use on University of Cincinnati projects. This information is supplemental and not intended to be a complete specification.

PART 1 - GENERAL

1.0 QUALITY ASSURANCE

A. Mock Ups

1. Prior to commencing masonry work, erect sample wall panels using materials, bond and tooling required for finish work.
2. Build on site where directed, 4' x 4' minimum sample panels reflecting materials and installation that can be expected in finish work. Include all special shapes that will be used on the project.
3. Sample panels shall be same thickness as walls in final construction.
4. Use sample panels to test proposed cleaning procedures, water repellents, and graffiti resistant coatings.
5. Upon acceptance of sample panels, masonry work shall commence.
6. Retain samples through period of masonry work, removing panels when directed.

B. Qualifications

1. Masons shall have minimum three years prior experience with similar project type and size.
2. Corner masons shall be most experienced crew members.

1.0 PROJECT CONDITIONS

A. Cold Weather Consideration

1. Do not perform masonry work when atmospheric temperature is below 40°F or is predicted to fall below 40°F or rise above 90°F within 72 hours without taking following precautions:
   a. Work shall conform to prior referenced standard. Masonry temperature shall not be less than 20°F when laid; Remove visible ice on masonry units. Heat mortar and maintain above freezing until used in masonry.
   b. 20°F - 25°F: Provide heat source and wind breaks on both sides of masonry under construction.
   c. Below 20°F: Provide enclosure for masonry under construction and heat source to maintain temperature above 32°F.
   d. 40°F to 32°F Completed Masonry: Protect completed masonry with cover for 24 hours after construction.
   e. 32°F to 25°F Completed Masonry: Complete enclose completed masonry with cover for 24 hours after construction.
   f. 25°F to 20°F Completed Masonry: Protect completed masonry with insulating cover for 24 hours after construction.
   g. Below 20°F Completed Masonry: Provide enclosure and supplemental heat as required to maintain masonry temperature above 32°F for 24 hours after construction.
   h. Accelerating admixtures may be used only with non-load bearing masonry.

B. Protection: Protect finished materials from mortar stains.

PART 2 - PRODUCTS

2. MASONRY REINFORCING
A. Horizontal, Standard: Truss design with 9 gage side rods and 9 gage cross wires, made from ASTM A 82 steel wire, deformed, no drips. Include standard mill galvanized zinc coating finish, except that for exterior walls, provide hot-dip galvanized joint reinforcing after fabrication to comply with ASTM A 153, Class B-2 coating (1.5 oz. per sq. ft.).

1. Multiwythe Construction: Provide one side rod for each face shell of hollow masonry units more than 4” wide plus one side rod for each wythe of masonry 4” or less in width. Size widths as required for embedment within each face shell and to engage the outer wythe by at least 1-1/2”

2. Multiwythe Adjustable: Two piece tab design with continuous single pair of side rods, truss type diagonal cross roads spaced no more than 16 inches o.c., with separate adjustable rectangular ties that engage the tab extending from the cross ties.

2.__ TIES AND ANCHORS

A. Veneer Anchors: Two piece assembly consisting of metal anchor section (minimum two fasteners per anchor) and 3/16” diameter pintle (with two legs), hot dipped galvanized steel. Anchors shall transfer load directly to metal studs without relying on sheathing for load transfer.

B. Veneer Screws: Steel drill screws, #10 diameter by length required to penetrate steel stud flange by not less than three threads, complying with ASTM C-954 except with hex washer head and neoprene washer, co-polymer corrosion resistant coating.

2.__ FLASHING MATERIALS

A. Through Wall Flashing: Composite 5 ounce copper fully bonded on both sides by asphalt and rough textured creped kraft paper.

2.__ MISCELLANEOUS MASONRY ACCESSORIES

A. Weep Ropes: 100 percent cotton (no plastic cores) sash cord of length required to comply with installation requirements indicated.

PART 3 - EXECUTION

3.__ INSTALLATION - GENERAL

A. Fill collar joints less than 3/4” wide solid with mortar for multiple wythe construction unless otherwise specified or detailed on Drawings.

B. Lay walls up using size of units indicated or required.

C. Cavity Protection: Provide means and methods to prevent bridging of cavity with mortar. Use "clean out" board or other means to keep cavity clean of mortar and mortar droppings. Strike off back of face veneer to remove excess, extruded mortar.

D. Do not adjust masonry units after setting. If units are disturbed, clean and reset in fresh mortar.

E. Do not retemper mortar that has begun to set. Discard old mortar and use fresh mortar.

3.__ FLASHING/WEEP HOLES
A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges and other obstructions to the downward flow of water in the wall to divert water to the exterior.

B. Prepare masonry surfaces to they are smooth and free from projection that could puncture flashing. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with mastic before covering with mortar. Install flashing as follows:

1. At composite masonry walls, including cavity walls, extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4", and through the inner wythe to within 1/2" of the interior face of the all in exposed masonry. Where interior surface of inner wythe is concealed by furring, carry flashing completely through the inner wythe and turn up approximately 2".
2. At lintels and shelf angles, extend flashing full length of lintels and minimum of 12" into masonry at each end.
3. At masonry veneer walls, extend flashing from face of veneer, through the veneer, up face of sheathing at least 8", and behind barrier/building paper.

C. Extend flashings through exterior face of masonry. Cut off flashing flush with surface of wall after masonry wall construction is complete.

D. Install flashing to comply with manufacturer’s instructions.

E. Install weep ropes in the head joints in exterior wythes of the first course of masonry immediately above concealed flashings and at top of wall cavity. Install weep rope in cavity turned up a minimum of 12" and secured to backup material. Cut rope flush with face of wall.

1. Space 16” o.c., for brick masonry, unless, otherwise indicated.
2. Space 32” o.c., for concrete masonry unless otherwise indicated.

3. CLEANING

A. Perform masonry work in as clean a manner as possible; remove excess materials, mortar drippings daily. Brush mortar droppings off of anchors, flashing, and ties as wall is constructed, do not allow mortar to set.

B. Point holes in joints; completely fill with mortar, tool properly, on daily basis.

C. Let masonry walls cure for at least two weeks and longer as required to prevent damage to mortar during cleaning operations.

D. Use brick cleaning compound on exterior brick work in strict accordance with manufacturer's instructions.

E. Face Brick

1. Except as otherwise specified by manufacturer, wet brick and clean with prepared brick cleaning compound; scrub with stiff fiber brushes and stainless steel or plastic scrapers (containing no ferrous metals); rinse thoroughly with clean water.
2. Do not apply cleaning solution on dry surfaces nor let cleaning solution dry on surfaces.
3. Do not allow solution to come into contact with finished surfaces.
4. Solution strength shall be adjusted according to type of mortar used.

F. Exposed Concrete Masonry Units
1. Clean off mortar droppings and rough edges with wire brushes or other acceptable method.
2. Remove loose sand from walls.
3. Do not use cleaning compounds on concrete masonry.

G. At completion of masonry work in any area, leave area clean and free of mortar residue or other debris.

3. **PROTECTION**

A. At end of each day's work, protect tops of walls exposed to weather with waterproof felts or plastic draped over masonry and weighted in place. Brace masonry against storm damage.

B. Protect mortar from quick drying in hot weather or freezing in cold weather.

C. Turn scaffold boards into vertical position or cover and secure with clean polyethylene sheet at end of day's work to prevent run off staining and splashing of walls in the event of rain.

D. At the end of each day's work, verify proper storage and protection of materials to be installed. Protect masonry units, mortar and other masonry materials from moisture.

END OF SECTION