

SECTION 04810

UNIT MASONRY ASSEMBLIES

PART 1 - GENERAL

1.1 PROJECT INCLUDES

- A. Unit Masonry Construction:
1. Brick veneer cavity wall on metal studs.
 2. Brick and concrete block composite walls.
 3. Brick and concrete block cavity walls.
 4. Concrete block bearing walls and non-bearing partitions.
 5. Stone trim built into masonry walls.
 6. Freestanding site masonry walls.
 7. Repair and remodeling of existing construction.

1.2 QUALITY ASSURANCE

- A. Testing: Independent testing laboratory will be engaged by the college.

PART 2 - PRODUCTS

- MATERIALS: NOTE TO A/E: It is of particular concern to Dartmouth College that the value of the architecture on campus is not diminished by efflorescence. To that end Dartmouth expects their project architects to thoroughly study the details, construction sequence, and material controls necessary to minimize efflorescence on new buildings. Following are excerpts from discussions reflecting some of the industry's thoughts as to the cause of this malady in this region of the country. Please take this communication under advisement in developing the design for this facility. It is required that the project A/E team review the design with the college FPO and FOM representatives using this information as a checklist and guide to the review.
- Efflorescence comes from moisture; all materials need testing; good air circulation in cavity is very important; water – struck is low absorption to begin with. Need good flashing. Cold walls – no heat – tend to show more efflorescence.
- Rain will take it off. Better to not try to wash, especially in first year. The masonry is not dry yet or could still leach some. Covered building is a bad problem and is worsened by weekly washing by mason in first year. 5-6 years later there is often no problem except in spots where there is a water problem.
- Paul LaChance (Morin) – C-67 :
 - We have 1 brick “effloresced”
 - Miller, Protze, Thomas and Lichtner have all tested Morin brick without any efflorescence.
 - Samples could have been contaminated.
 - Brick is only a medium for the salts; there is nothing in the brick material that contributes.
 - Residue – 99% of the time: Calcium usually from Portland cement or lime or ground water.
 - His last test on W-struck brick was 6/87. The cost was \$750.
 - Note: Paul Morin has offered to speak directly with the architect on any Dartmouth College projects. This is advisable.

- A. Face Brick:
 - 1. Size: Standard modular, 3-5/8 inches thick by 2-1/4 inches high by 7-5/8 inches long.
 - 2. Grade: ASTM C 216, Grade SW, severe weathering type areas subject to freeze-thaw.
 - 3. Type: ASTM C 216, Type FBA, for special architectural effects from non-uniformity in individual units.
 - 4. Special Shapes: As required by building configuration.
 - 5. Bond Pattern: Flemish Bond is a prevalent bond pattern at the college. It is not necessarily Dartmouth's intent to require Flemish Bond, but to ask the architect to consider its validity for this project and to comment to the college thereof.
 - 6. Product: Waterstruck By Morin Brick Company. Substitutions for size and brick type will be coordinated through Dartmouth College Facilities Planning Office.
- B. Concrete Masonry Units: No special requirements.
- C. Mortar and Grout: No special requirements.
- D. Reinforcing Steel: No special requirements.
- E. Joint Reinforcing: No special requirements
- F. Ties and Anchors: A/E must review masonry tie accessories with Dartmouth College with particular attention to galvanic reaction to ties/anchors.
 - 1. Adjustable Masonry Veneer Anchors: Suggest using flat strap tie with sealing tape for screw penetrations. Stainless steel finish screws shall be used.
 - 2. Screws for Steel Studs: ASTM C 954 organic polymer coated steel drill screws. Use organic coated only. Stainless is said to have galvanic action with galvanized steel stud framing.
- G. Masonry Accessories:
 - 1. Corrugated plastic head-joint weeps.
 - a. Cell Vent; Dur-O-Wal, Inc.
 - b. #QV-Quadro-Vent; Hohmann & Barnard.
 - c. Suggest using corrugated weep joint for weep and vent (used at top of veneer walls to equalize air pressure in cavity and help prevent efflorescence)
- H. Malcolm Swenson is a granite specialist that is local to Dartmouth College and very knowledgeable regarding the granite available to the college projects. Design team should contact Malcolm as needed at (603) 643-0363.

PART 3 – EXECUTION

- A. The architect must establish minimum and maximum temperature requirements herein that satisfy ACI recommendations and relate to the weather of Hanover, New Hampshire.

END OF SECTION

Section 3 – Using min/max temp requirements for ACI cold/hot weather.