

THERMAL AND MOISTURE PROTECTION

PART 1 – GENERAL

- 1.01 **Summary:** This section describes University specific requirements for thermal and moisture protection. It includes waterproofing, air and vapor barriers, and sealants and caulks. Information in this section is intended to guide and supplement specifications provided by the Architect and Engineer of Record.
- 1.02 **Related work** located elsewhere in these specifications includes roofing, flashing, and roofing accessories.
- 1.03 **Quality Control:**
- A. Utilize qualified installers who are authorized, approved, or licensed by the manufacturer to install the specific product.
 - B. **Pre-installation conference:** Conduct pre-installation conference at the Project site to review site specific conditions and clarify project requirements.
 - C. **Single source:** Obtain materials from a single source with documented experience providing thermal/moisture protection.
 - D. **Water testing:** For waterproofing, obtain samples from the Project site at approximate locations of the work and perform tests for acids, alkalis, or other contaminants which might affect the performance of the waterproofing.
 - E. **Protect** stored waterproofing, roofing, and thermal insulating materials such that they are maintained in a dry condition prior to installation.
 - F. Comply with the following standards:
 - ASTM requirements
 - ABAA: Air Barrier Association of America
 - NRCA Roofing and Waterproofing Manual
 - SMACNA, Sheet Metal & Air Conditioning Contractor's National Association, latest edition.
 - USGBC requirements for LEED certification

PART 2 – MATERIALS

- 2.01 Provide materials which sustain long-lived projects and encourage protection of the building envelope from damage caused by water and vapor intrusion.
- 2.02 Water-proofing products shall be designed to function as the principal moisture stop in arresting water predominantly in a horizontal application. **Subject to proven past-performance and available warranties, products may include:** sheet butyl, PVC, EPDM, CPE, CSPE, neoprene, hypalon, or composite laminated membrane. They may be adhesive bonded, self-adhered, loose laid, or mechanically secured.

- 2.03 **Fire Stopping:** Fire stop material shall be used to close all openings and seal all penetrations of fire resistive construction. Material should be rated such that construction rating is uninterrupted.
- 2.04 **Sealants, Caulking and Seals:** Provide the highest quality of sealants for each individual application. Provide long life-cycle products capable of sustaining water-tight construction while maintaining desired finished appearance. Carefully consider aesthetics of sealants applied at cracks or junctures of different materials or horizontal and vertical surfaces. Comply with ASTM requirements.
- 2.05 **Exterior Closure Assemblies:**
- A. Do not use any exterior wall assembly which has not been tested (and found satisfactory) for a minimum of (20) years. EIFS (Exterior Insulated Finish Systems) are not acceptable to the University.
 - B. Do not use sealants to prevent water infiltration.
 - C. Do not use galvanized metal flashings.

PART 3 – EXECUTION

- 3.01 If required, give special consideration to design of Radon barriers to ensure that all barrier penetrations are thoroughly sealed.
- 3.02 Design vapor and air barriers so that a continuous seal is formed for the building enclosure. Seal gaps between adjacent materials forming wall and roof openings.
- 3.03 Slabs on grade shall be designed and installed so as to prevent damage to membranes during construction. AT special areas and where waterproofing is considered necessary for slab on grade, a double slab system is preferred in order to reduce chances of a punctured membrane. A product equal to “Bituthane” by W.R. Grace should be considered under the wear slab. For a basement waterproofing condition, a water bar is essential at walls and columns.
- 3.04 Basement walls shall be damp-proofed or waterproofed on the soil side. The type of material to be used depends upon the condition; a brushed-on coat of bituminous paint might be adequate for dampness but sheet membrane waterproofing of “Bentonite” or equal should be considered where hydrostatic pressure is suspected. Slope grade away from wall and provide drain system, if warranted.
- 3.05 Provide a through-wall damp-proofing membrane to prevent moisture in the soil from extending up the wall by capillary action. Material can be as light as 2 oz. copper-backed sisal paper if properly lapped and sealed at joints.
- 3.06 Design vapor and air barriers so that a continuous seal is formed for the building enclosure. Seal gaps between adjacent materials forming wall and roof openings.

- 3.07 In waterproofed floor areas, a 24-hour water test is required prior to placement of the finish flooring. If leaks occur, another test is required after repairs are made.
- A. Special consideration shall be given to preventing leakage in shower and drying room areas.
 - B. A depressed floor shall be provided for toilet areas where ceramic tile is used to allow space for the waterproofing pan and slope to drain.
- 3.08 If water repellent materials are applied to the exterior wall system, provide clear elastomeric water repellent. In new construction, applied coatings will not be accepted as a substitute for good construction practices utilizing proper detailing, flashings, and air/vapor barriers.
- 3.09 Make provisions to prevent staining of the building envelope from flashing materials.
- 3.10 Caulking is not to be used as permanent construction and should be specified for use only as a supplement to properly designed and detailed joints.

END OF SECTION