

University Contact: Project Manager on said project

SECTION 7: THERMAL AND MOISTURE PROTECTION

This section of the Standards establishes minimum requirements only and is to be used to guide, and not replace, the complete project specification section. The Architect and/or Engineer shall further produce project specifications in line with industry standards that incorporate these University requirements.

➤ PROJECT GUIDELINES

- Moisture and waterproofing systems are required at all University buildings.
- Impermeable moisture barriers are required for all below-grade slabs and perimeter below grade walls including foundation drainage systems, mechanical dewatering systems and/or equipment, damp proofing and/or waterproofing. The design team should review these systems with the PM prior to making decisions on systems to be used and coordinate system components with other related thermal and moisture protective systems in the building envelope.
- Field-fabricated, below grade wall penetrations will not be allowed. Manufactured system components like link seals must be specified, detailed, and provided.
- All areas of University Buildings that form a barrier between the interior space and the exterior are to be insulated. The design team is to review the conditions and provide an environmentally appropriate system at these locations so that the thermal characteristics of the structure are well considered and that they function together to achieve the intended performance.
- Pre-Installation: The University requires Pre-installation Conferences, with all related trades for all building enclosure components

➤ SHEET WATERPROOFING

- The design team shall specify a min. 10-year warranty on the material(s) being specified.
- The University requires that membranes on horizontal surfaces covered by other work be tested for leaks with a 2-inch depth of water, maintained for 48 hours.
- All sheet waterproofing is to be inspected and approved by the manufacturer's representative prior to being covered by subsequent work.

➤ INSULATION

- The University strives for a reduction in energy use and has the following requirements towards that goal:

Division 7 THERMAL AND MOISTURE PROTECTION

- Unless otherwise noted, all corridor, restroom, classroom, laboratory, conference, meeting, lobby, and office space walls and ceilings shall be fully sound attenuated.
- For open plenum areas, reference Section 230700 HVAC Insulation.
- Do not specify any form of insulation to be laid directly on accessible ceilings.
- Specify mechanical attachment for all insulation. Do not specify insulation to be adhesive applied or installed loose
- EIFS should be avoided as proposed new cladding material.

➤ ROOFING

- Water shall be directed from the center of a roofed area to the building's perimeter where water collection is to take place. The design team is to specifically avoid sloping roofs to a center collection point from which piping is routed through the interior of the building and underground to daylight.
- All rain leaders and down spouts are to be located on the exterior of the building. Rain leaders shall not terminate below slabs within a University building.
- Specify primary products produced and supplied from a single manufacturer as a part of a roofing system that the manufacturer will warranty.
- Specify that a single installer shall perform the work and have not less than 5 years of successful experience in the installation of such systems and that the installer be a part of a manufacturer-sponsored, quality-control warranty. The roofer and sheet metal workers shall install all roofing flashings, insulation, and sheet metal work required to make a complete waterproof installation. Please include in the documents that while sub-contractors may provide certain counter flashings and similar materials, the roofer will be responsible for their proper installation.
- Confirm that the specifications call for the Contractor to protect finish systems (including roof membranes) from subsequent damage by other trades. Protection will be required for all new and existing roofing during project work. The level and type of protection as well as materials must be identified in the project documents by the design professional.
- The University requires a min. 20-year warranty/bond on all roofing systems.
- Confirm that the specifications call for the Contractor to review standards on Landscaping, Grounds and Maintenance, to understand obligation to protect / replace affected adjacent areas.
- Fixed Equipment Inventory is required on all roofing projects, regardless of size and scope of work.

Division 7 THERMAL AND MOISTURE PROTECTION

- No single ply membrane roofs will be allowed. Under no circumstance are more than two (2) layers of roof systems allowed as a permanent solution. Re-covering roofing is highly discouraged and will only be permitted when it is to apply a temporary layover protection for extraordinary water infiltration conditions. When re-covering roofing is considered, the design professional must verify the structural and loading capacities before application. This section does not apply to conversions of or additions to existing to install a green roof.
- Flashing shall be designed so that, at the time the membrane requires replacement, it is possible to achieve watertightness requirements. without having to remove/disturb major building elements or involve trades other than roofers and sheet metal workers.
- Specifications for sealants should include a request for written guarantee that the sealant manufacturer, General Contractor, and sealant installer jointly guarantee to replace, at no cost to the University, any or all joints which fail to establish and maintain an airtight and watertight continuous seal without staining or deteriorating joint substrates within.

➤ FIREPROOFING

- Installers must be experienced in a minimum of 3 previous similar projects and certified, licensed, or qualified by the firestopping manufacturer as having been provided the necessary training to install manufacturer's products per specified, and code-regulated, performance requirements. Assign installation of through-penetration firestop systems and fire-resistive joint systems in project to a sole-source, single, firestop specialty contractor.
- FM Global: Projects must comply with FM Global requirements. Materials must be listed in the FM Approval Guide.
- Design team to identify fire stopping locations and review proposed locations and materials with the UD Fire Marshal and representatives of EHS prior to finalizing the design, including but not limited to:
 - Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways, and raceways through fire-rated vertical and horizontal barriers.
 - Safing slot gaps between edge of floor slabs and curtain walls.
 - Openings between structurally separate sections of wall or floors.
 - Gaps between the top of walls and ceilings or roof assemblies.
 - Expansion joints in walls and floors.
 - Openings around structural members which penetrate floors or walls.

➤ SEALANTS

- All intersections between dissimilar materials are to receive a sealant joint treatment that is appropriate for the items in consideration.
- Performance specifications are encouraged, instead of proprietary manufacturer's names or materials, to not restrict vendors to a limited list.

Division 7 THERMAL AND MOISTURE PROTECTION

- Specify primary products as produced and supplied from a single manufacturer, which has produced that product successfully for not less than 5 years. Backing materials shall be a part of a manufacturer's total system for the joint size and type indicated.
- Specify that an approved manufacturer's installer shall perform the work and have not less than 5 years of successful experience in the installation of caulks and sealants.
- Provide a submittal requirement for product compliance, color selection, and samples of sealants used in applicable unique joint conditions.
- Confirm that maximum allowable exterior joint width for caulking/sealant shall not exceed 1 inch.
- FM Global: Projects must comply with FM Global requirements. Materials must be listed in the FM Approval Guide.

❖ END OF SECTION