

## PART I - GENERAL

- 1.01 Consultant shall consult with UAF FS to determine the best wall section and vapor retarder design for the building and/or application during concept design level. Vapor retarder must be planned to protect the insulation from moisture and provide an air-tight assembly. Placement of the retarder within the wall section shall be reviewed with UAF FS. Wall systems that place the vapor retarder outboard of the interior walls that are filled with electrical and mechanical outlets and piping is preferred. When interior spaces are humidified, the space shall be isolated from non-humidified spaces with a vapor retarder. Double vapor retarders are not allowed.
- 1.02 Provide readily constructible, complete and **continuous** design and installation of vapor retarder system that shall also act as an air barrier to prevent leakage of water vapor and heated interior air to the exterior. Provide vapor retarder system design and details for each area:
- A. Doors and windows.
  - B. Outlets, switches, and other electrical penetrations.
  - C. Seismic and expansion joints.
  - D. Interface with interior partitions.
  - E. Roof penetrations.
  - F. Floor/wall interface.
  - G. Roof/wall interface.
  - H. Structural elements.
  - I. Floor slabs.
  - J. Mechanical, electrical and miscellaneous pipe or conduit penetrations.
  - K. Louvers and Ducts
  - L. Exterior Expansion Joints
- 1.03 Quality Control:
- A. Require 100 percent visual inspection by FS/DDC and possibly blower door test of complete vapor barrier system before system is concealed by interior construction, finishes.

## PART 2 – PRODUCTS

- 2.01 Sheet materials:
- A. Polyethylene Sheeting: Minimum of clear 10 mils (minimum perm of .03) polyethylene sheeting.
  - B. Self-Adhering sheet goods: Minimum perm rating of .03 such as Grace Ice and Water Shield or Henry Blueskin
  - C. Sheet metal backpan: Minimum 22 gauge galvanized sheet metal backpan in curtain wall systems.
  - D. All Sheet goods shall meet code for flame and smoke ratings as required for the facility.
- 2.02 Use pressure sensitive polyethylene tape with a perm rating equal to or better than the vapor retarder and with good adhesion rates such as DOW SARAN or VentureTape.
- 2.03 Use acoustical sealant that remains pliable as recommended by manufacturer: Tremco, Alternate Brand Request or Substitution request required.
- 2.04 Use adhesives recommended by manufacturer of the vapor retarder and compatible with substrate surfaces encountered.

## PART 3 - EXECUTION

- 3.01 General installation, polyethylene sheeting: Per manufacturers recommendations and:
- A. Overlap and seal wall vapor retarder minimum 2 feet or 2 studs/joists at all intersections using sealant and tape to seal the lap.
  - B. Intersections-interior partitions: Extend vapor retarder continuously behind, at intersections with exterior walls and ceilings.
  - C. Apply continuous bead of acoustical sealant to perimeter of substrate before applying vapor retarder.
  - D. Interior slab on grade: Not required, consult with UAF FS/DDC
  - E. Continue vapor retarder continuous from the exterior wall onto the roof prior to installing the roofing.
  - F. Install vapor barrier in such a way to allow for expansion and contraction and movement of the exterior wall framing.

- 3.02 Attachment as recommended by manufacturer.
- A. Fasten sheeting at top and bottom of wall. Minimize fastening within the field of the wall. Battens may be needed to support plastic sheet goods every 8 feet.
  - B. Allow for adequate expansion and contraction of the wall system.
- 3.03 Avoid penetrations thru adequate design coordination.
- A. Utilize two layers of tape to seal nails, staples, punctures or holes up to ½ inch in diameter.
  - B. For large holes, utilize a seal adhered membrane.
  - C. In wall sections requiring structural elements to pass thru the vapor retarder, apply self adhered membrane between vapor retarder and element to ensure adequate seal.
- 3.04 Sealing:
- A. Exterior and penetrations: Seal joints to other surfaces; use adhesive. Run sealing tape and acoustical sealant continuously along lapped materials
  - B. Stud wall partitions abutting exterior wall or roof construction: Wrap vapor retarder around edges, lapping over adjacent vapor retarder minimum 2 feet each side. Provide continuous vapor retarder between interior framing and exterior walls, floor and roof.
  - C. Nails, staples, tears, and punctures: Refer to 3.03 above.
  - D. Design facility to prevent electrical boxes, plumbing, etc. in the exterior walls to the greatest extent possible. In laboratory facilities, the design requires construction of a false wall inboard of the vapor retarder to route piping and electrical.
  - E. Electrical boxes, knock-outs in electrical boxes, and light fixtures: Create vapor tight condition when sealing. Careful inspection required prior to covering, repair where necessary, and re-inspect. Utilize electrical boxes that are Air-Vapor Barrier rated.
  - F. For louver penetrations and other similar penetrations, utilize a sheet metal back-pan design or similar material to bridge between the vapor retarder and louver/duct, sealing and taping the vapor retarder to the metal back-pan.
  - E. Completed vapor retarder envelope to be absolutely vapor and air tight.
  - F. Provide pest intrusion barriers at all exterior wall and roof vents.
  - G. Repair all damage to retarder prior to inspection by Owner.

END OF SECTION