

PART 1 GENERAL

1.1 REFERENCE

- .1 Comply with the General Conditions of the Contract, Supplementary General Conditions and the requirements of Division 1.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Cast in Place Concrete Section 03300
- .2 Precast Concrete Planks Section 03400
- .3 Unit Masonry Section 04200
- .4 Rough Carpentry Section 06100
- .5 Curtainwall Section 08900

1.3 SCOPE OF WORK INCLUDED

- .1 Work to be carried out under this section includes the furnishing of all labour, materials, equipment and services necessary to the supply and installation of the air/vapour seal membrane to the full extent of the drawings and as specified herein.
- .2 Work to include; the preparation of all substrates to a condition acceptable for the installation of the air/vapour seal membrane, installation of the air/vapour seal membrane and the detailing of all interruptions in, penetrations through and terminations of the air/vapour seal membrane.
- .3 All air/vapour seal membrane installations shall be followed subsequently by the placement of a cavity wall insulation, installed in such a manner so as to ensure the long term securement of the insulation tight against the air/vapour seal membrane, this to ensure optimum thermal performance of the wall assembly. Installation procedures shall be as specified by the design authority. Consult with the air/vapour seal membrane manufacturer for installation procedures as they relate to the air/vapour seal membrane and options for insulation securement.

1.4 SUBMITTALS

- .1 Submit certified copy of test data from recognized independent testing laboratory confirming performance properties of air/vapour seal membrane specified in PART 2.2.1.

- .2 Submit appropriately sized samples of air/vapour seal membrane, 305 mm x 305 mm (12 in x 12 in), for verification of compliance with material specified in PART 2.2.1.

1.5 QUALITY ASSURANCE

- .1 All air/vapour seal membrane and accessories shall be applied by a contractor acceptable to the manufacturer. Provide written evidence of such endorsement from the manufacturer when and where requested.
- .2 Installation of the air/vapour seal membrane shall be inspected as required prior to, periodically during and upon completion by a representative of the manufacturer to ensure compliance with the specifications and the manufacturers published guidelines. Written copies of such inspections shall be provided by the manufacturer where requested and/or deemed necessary.
- .3 On direction from the design authority, the continuity and integrity of the in-place air/vapour seal membrane may be evaluated through testing procedures independent of the manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver all air/vapour seal membrane and accessory materials to the project site in original and unopened packaging with the manufacturer's labels intact.
- .2 The air/vapour seal membrane and accessory materials shall be stored on site in such a manner so as to protect them from precipitation, ground moisture and temperature extremes. Raised platforms, waterproof coverings and interior storage shall be employed when and where necessary.
- .3 Accessory materials including; sealants, mastics, adhesives, primers and surface conditioners shall be stored at temperatures appropriate for those materials specified in PART 2. Consult precautionary statements on product labels for storage and handling instructions before use and make reference to applicable WHMIS SAFETY DATA SHEETS.
- .4 Pallets of air/vapour seal membrane shall not be double stacked.

1.7 SITE CONDITIONS

- .1 The air/vapour seal membrane and accessory materials shall be applied at ambient temperatures satisfactory to the manufacturer and under dry conditions only.
- .2 Concrete block assemblies shall be cured a minimum of seven (7) days and be free of surface moisture. Allow a minimum of twenty four (24) hours drying period following precipitation.
- .3 Prior to the installation, the contractor shall inspect those areas to receive the air/vapour seal membrane to ensure that they are clean, dry, sound, smooth and continuous.

1.8 REFERENCES

- .1 The air/vapour seal membrane as specified herein and its installation, shall conform to and proceed in accordance with any and all codes, standards and practices governing work of the nature described throughout this specification.

PART 2 PRODUCTS

2.1 MANUFACTURER

- .1 The air/vapour seal membrane system as described herein shall be PERMA-BARRIER System 4000 as manufactured by W.R. Grace & Co. of Canada Ltd. or Airshield as manufactured by W.R. Meadows.
- .2 Alternative manufacturers must provide complete system to meet or exceed performance of products specified.

2.2 MATERIALS

- .1 EPDM Membrane: PERM-A-BARRIER System 4000 by Grace Membranes or EQUAL. To be composite sheets comprised of rubberized asphalt integrally bonded to a film of high density cross laminated polyethylene maintaining a minimum thickness of 1 mm (40 mils).
(Air-Shield is a prefabricated, self adhesive, modified bituminous membrane)
- .2 Tapes: maintaining a minimum thickness of 30 mils.

- .3 Wall Flashing Membranes: maintaining a minimum thickness of 40 mils.
- .4 Primer: rubber based, dispersed insolvent, designed for use at a minimum ambient temperature of -10 deg C (14 deg F).
(Sealtight Mel-Primer)
- .5 Surface Conditioner: polymer based, dispersed in water, designed specifically for use with EPDM Membrane.
- .6 Mastic: single component rubber based mastic.
(Sealtight Pointing Mastic)
- .7 BITUTHENE PBA-3000 or equal Protection Board Adhesive: fast drying rubber based cement, brown in colour.
(Sealtight PC-1 Protection Board)

PART 3 EXECUTION

3.1 GENERAL

- .1 Examine all areas to receive the Membrane to ensure that they are suitably prepared for its installation. Have deficiencies addressed and corrected prior to commencement of the installation.
- .2 Surfaces shall be smooth, clean, dry and free of any foreign matter that would otherwise hinder either the adhesion or regularity of the installation.
- .3 The Membrane and accessory materials shall be installed only in suitable weather and where there is no threat of precipitation. Temperature range during installation shall be 0 to 38 deg C.
- .4 Accessory materials shall be stored at temperatures no less than 4 deg C and no greater than 38 deg C. Containers shall be resealed after usage.

3.2 PREPARATION

- .1 Inspect all surfaces to receive the Membrane to ensure that they are continuous and free of voids and excessive gaps. Blockwork shall be complete and laid up tight to all framed openings. Report and have all deficiencies corrected.

- .2 Condition all surfaces to receive the Membrane using Surface Conditioner, applied by spray in accordance with mixing and application instructions on product labels.
- .4 To avoid excess pick up of air borne dust once priming has been completed, prime only as much areas as can be covered with Membrane the same working day. If not covered in the same working day, reprime.

3.3 MEMBRANE INSTALLATION

- .1 Apply Membrane horizontally to the primed blockwork between projecting masonry reinforcing, beginning at the base of the wall area.
- .2 Each length of Membrane shall be installed such that its upper edge runs continuously along the underside of the line of masonry reinforcing. Subsequent sheets applied above shall overlap the sheet below an average of 2 in immediately below the line of reinforcing. Minimum overlaps shall be 1 1/2 in.
- .3 Alternate method of installation: Membrane is positioned along the top side of the masonry reinforcing and smoothed upward and into place. By continuing in this manner, the next sheet above will overlap the cuts made in the lower sheet immediately above the line of reinforcing.
- .4 Cut the membrane at the location of the tie wires projecting from the wall to enable the membrane to be laid into place.
- .5 End laps in the Membrane shall maintain a minimum overlap of 2 in.
- .6 The Membrane shall be pressed firmly into place by means of a hand roller thereby ensuring continuous and intimate contact with the substrate.
- .7 The Membrane installation shall continue to a point, which as outlined in the plans and specifications, interfaces with other elements designated as integral to the overall air/vapour barrier system. Ensure compatibility with those components and consult manufacturer's representative for assistance on proper tie-ins.

3.4 DETAILS

- .1 To maintain the integrity of the installation at the base of the tie wire locations, apply Mastic to seal any voids which may have been caused in fitting the membrane around these projections.
- .2 Fit Membrane tightly around all penetrations through it and seal using Mastic.
- .3 Continue the Membrane into all openings in the wall area, ie: windows, doors, etc., and terminate at a point that will ensure that it will not be visible from the interior.
- .4 The Membrane installation shall be tied into and made continuous with all framed openings. Due to the wide range of frame profiles, closures and transitions, a standard detail is not practical. Consult manufacturer's representative for assistance on these detail locations.
- .5 Construction & control joints: double ply covered with initial strip of 152 mm (6") width and second strip of 457 mm (18") width, after application of dampproofing.
- .6 Co-ordinate the installation of the Membrane with the roofing trade to ensure continuity of the air/vapour seal membrane with the roofing system at this critical transition area. Prime if necessary to prevent deterioration caused by dissimilar or incompatible materials.
- .7 At the end of each working day, and assuming a wall area has been only partially covered, apply a bead of Mastic along the top edge of the Membrane at its termination to prevent the vertical drainage of precipitation from running in behind the Membrane and undermining its adhesion. Tool the Mastic to ensure that it is worked into the surface of the block work.
- .8 Before covering in the Membrane with the cavity insulation, inspect and repair as necessary any punctures, damaged areas or inadequately lapped seams. Repairs shall be made using the Membrane appropriately sized to extend a minimum of 4 in. in all directions from the perimeter of the affected area.

3.5 COORDINATION

- .1 Co-ordinate with Section 07200 to ensure that installation of the cavity insulation shall follow as closely as possible the installation of the Membrane.

END OF SECTION