

**Part 1 General**

**1.1 RELATED SECTIONS**

- .1 Section 07 62 00 – Sheet Metal flashing and Trim.

**1.2 REFERENCES**

- .1 The following standards are applicable to this section:
  - .1 ASTM International:
    - .1 ASTM D412 - 06a(2013) Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
    - .2 ASTM D570 - 98(2010)e1 Standard Test Method for Water Absorption of Plastics.
    - .3 ASTM D882 - 12 Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
    - .4 ASTM D1876 - 08 Standard Test Method for Peel Resistance of Adhesives (T-Peel Test).
    - .5 ASTM D1970 / D1970M - 11 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
    - .6 ASTM E 84-12c: Test Method for Surface Burning Characteristics of Building Materials.
    - .7 ASTM E 96/E96M-12: Standard Test Methods for Water Vapour Transmission of Materials.
    - .8 ASTM E154 / E154M – 08a(2013)e1 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover
    - .9 ASTM E 2112-07: Standard Practice for Installation of Exterior Windows, Doors and Skylights.
    - .10 ASTM E 2178-13: Standard Test Method for Air Permeance of Building Materials.
    - .11 ASTM E 2357-11: Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.

**1.3 PRE-INSTALLATION MEETING**

- .1 Convene pre-installation meeting one week prior to beginning work of this Section and on-site installations. Agenda for meeting to include:
  - .1 Verify project requirements.
  - .2 Review installation and substrate conditions.
  - .3 Co-ordinate with other building subcontractors.
  - .4 Review manufacturer's installation instructions and warranty requirements.
- .2 Co-ordinate pre-installation meeting with trades of the following sections:
  - .1 Section 07 61 00 – Metal Siding.
  - .2 Section 07 62 00 – Sheet Metal flashing and Trim.

**1.4 SUBMITTALS**

- .1 Qualification Statements:
  - .1 Submit proof of installer's minimum of three years' experience specialized in the installation of specified products on projects of similar size and scope.

**1.5 CLOSEOUT SUBMITTALS**

- .1 Provide the City with three (3) copies of operation and maintenance data and information.
- .2 Submit final executed warranty.

**1.6 QUALITY ASSURANCE**

- .1 Applicator of the primary air barrier membranes to be authorized by the manufacturer as suitable for the execution of the Work.
- .2 Perform Work in accordance with manufacturer's written instructions and this specification.
- .3 Maintain one copy of manufacturer's written instructions on site.
- .4 Allow access to Work site by the air barrier membrane manufacturer's representatives.
- .5 Components used shall be sourced from one manufacturer, including sheet membrane, air barrier sealants, primers, mastics, flashings and adhesives.
- .6 Single-Source Responsibility:
  - .1 Obtain air barrier materials from a single manufacturer regularly engaged in manufacturing the product.
  - .2 Provide products which comply with all federal, provincial, and local regulations with regards to controlling the use of volatile organic compounds (VOC's).
- .7 Mock-up
  - .1 Construct a mock-up in accordance with Section 01 45 00 Quality Control.
  - .2 Construct mock-up of each type of flashing termination and intersection shown on Drawings.
  - .3 Co-ordinate construction of mock-up with:
    - .1 Section 07 61 00 – Metal Siding.
    - .2 Section 07 62 00 – Sheet Metal flashing and Trim.
  - .4 Allow 48 hours for inspection of the mock-up by Contract Administrator prior to proceeding with air barrier work. Mock-up may remain as part of the Work.

**1.7 DELIVERY, STORAGE, AND HANDLING**

- .1 Refer to current Product MSDS for proper storage and handling.
- .2 Deliver all materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.
- .3 Store all roll materials on end in original packaging. Protect rolls from direct sunlight and weather until ready for use.
- .4 Store all air barrier membranes, adhesives and primers at temperatures of 5 degrees C (40 degrees F) and rising.
- .5 Keep solvent away from open flame or excessive heat.
- .6 Waste Management and Disposal
- .7 Contractor to verify compliance for Volatile Organic Compounds (VOC) limitations of products to comply with all federal, provincial, and local regulations controlling use of volatile organic compounds (VOC).

**1.8 WARRANTY**

- .1 Provide manufacturer's standard 1-year warranty.

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**Part 2 Products**

**2.1 MATERIALS**

- .1 Vapour Permeable Self-Adhesive Air Barrier Membrane:
  - .1 Self-adhesive, cold-applied, vapour permeable, water resistive sheet air barrier membrane consisting of engineered film and permeable adhesive technology with split-back poly-release film.
  - .2 For application over gypsum exterior sheathing as primary air barrier.
  - .3 Acceptable Products
    - .1 Sopraseal Stick VP by Soprema
  - .2 Primer: As recommended by manufacturer.
  - .3 Bituthene Mastic: As recommended by Manufacturer.
  - .4 Air barrier membrane components and accessories must be obtained as a single-source from the membrane manufacturer to ensure total system compatibility and integrity.

**2.2 ACCESSORY PRODUCTS AND MATERIALS COMPATIBILITY**

- .1 Accessory products including caulks and sealants, primers, etc. which are in direct contact with, or form part of the air barrier systems must be chemically and physically compatible with the materials to which they are being applied and must be approved for that use by their manufacturer and the manufacturers of the air barrier materials they contact.
- .2 Contractor to confirm material, primer and substrate compatibility with air barrier manufacturer.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Verify that surfaces and conditions are ready to accept the Work of this section. Notify Contract Administrator in writing of any discrepancies. Commencement of the Work or any parts thereof shall mean acceptance of the prepared substrates.
- .2 All surfaces must be sound, dry, clean and free of oil, grease, dirt, excess mortar or other contaminants detrimental to the adhesion of the membranes. Fill voids, gaps and spalled areas in substrate to provide an even plane. Strike masonry joints full-flush.
- .3 Curing compounds or release agents used in concrete construction must be resin based without oil, wax or pigments.

**3.2 SURFACE PREPARATION**

- .1 All surfaces must be sound, clean and free of oil, grease, dirt, excess mortar or other contaminants. Fill spalled areas in substrate to provide an even plane.
- .2 Ensure all preparatory Work is complete prior to applying primary air barrier membrane.

**3.3 APPLICATION OF SUBSTRATE ADHESIVE PRIMER**

- .1 Adhesive Primer for Self-Adhered Membranes.
  - .1 For the application of SBS modified self-adhered window sill pan flashings, through-wall flashings and other applications of SBS modified self-adhered transition membranes, the substrate needs to be conditioned with applicable adhesive primer.

- .2 Apply adhesive primer at rate recommended by manufacturer to all areas to receive self-adhering sheet membrane as indicated on drawings by roller or spray and allow to fully dry.
- .3 Adhesive primed surfaces not covered by self-adhering membrane or self-adhering through-wall flashing membrane during the same working day must be re-conditioned.

### 3.4 INSTALLATION OF AIR BARRIER SYSTEM

- .1 Inside and Outside Corners
  - .1 Seal inside and outside corners of sheathing boards with a strip of self-adhering vapour permeable membrane extending a minimum of 3 inches on either side of the corner detail.
  - .2 For inside corners, pre-treat the corner with a continuous ½ inch bead of bituthene mastic.
  - .3 Adhesive prime surfaces in an intermittent pattern, at a rate of 200 – 250 sq ft/gal where appropriate due to surface conditions, to achieve surface adhesion as per manufacturers' instructions and allow drying.
  - .4 Align and position self-adhering transition membrane, remove protective film and press firmly into place. Ensure minimum 2 inches overlap at all side laps and 3 inches overlap at all end laps of membrane.
  - .5 Roll all laps and membrane with a counter top roller to ensure seal.
- .2 Transition Areas
  - .1 Tie-in to structural beams, columns, floor slabs and intermittent floors, parapet curbs, foundation walls, roofing systems and at the interface of dissimilar materials as indicated in drawings with self-adhered air barrier transition membrane.
  - .2 Prime surfaces in an intermittent pattern, at a rate of 200 – 250 sq ft/gal where appropriate due to surface conditions, to achieve surface adhesion as per manufacturers' instructions and allow to dry.
  - .3 Align and position self-adhering transition membrane, remove protective film and press firmly into place. Provide minimum 3 inch lap to all substrates.
  - .4 Ensure minimum 2 inches overlap at all side laps and 3 inches overlap at all end laps of membrane.
  - .5 Roll all laps and membrane with a counter top roller to ensure seal.
- .3 Primary Water Resistive Air Barrier
  - .1 Apply self-adhering water resistive air barrier membrane complete and continuous to substrate in an overlapping shingle fashion and in accordance with manufacturer's recommendations and written instructions. Stagger all vertical joints.
  - .2 Prime surfaces in accordance with manufacturers' instructions.
  - .3 Align and position self-adhering membrane to substrate, remove top panel of protective release film and press firmly into place.
  - .4 Ensure alignment, hold membrane in place to avoid wrinkles and sequentially remove remaining panels of protective film and press firmly into place.
  - .5 Ensure minimum 75 mm (3 inch) overlap at all end and 50 mm (3 inch) side laps of subsequent membrane applications.
  - .6 Apply pressure to all membrane surfaces, laps and flashings using an appropriate roller to provide best possible surface adhesion.
  - .7 At the end of each days work seal the top edge of the membrane where it meets the substrate with termination sealant. Trowel to a feathered edge to seal termination and shed water.

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**3.5 APPLICATION OF TERMINATION SEALANT**

- .1 Seal membrane terminations, heads of mechanical fasteners, masonry tie fasteners, around penetrations, duct work, electrical and other apparatus extending through the primary water resistive air barrier membrane and around the perimeter edge of membrane terminations at window and door frames with bituthene mastic.

**3.6 FIELD QUALITY CONTROL**

- .1 Make notifications when sections of Work are complete to allow review prior to covering air barrier system.

**3.7 PROTECTION**

- .1 Damp substrates must not be inhibited from drying out. Do not expose the backside of the substrate to moisture or rain.
- .2 Cap and protect exposed back-up walls against wet weather conditions during and after application of membrane, including wall openings and construction activity above completed air barrier installations.
- .3 Water resistive air barrier membranes are not designed for permanent exposure. Good practice calls for covering as soon as possible, not to exceed 150 days.

**END OF SECTION**