LIQUID APPLIED AIR BARRIER

1. GENERAL

1.1 Installers Qualifications

.1 Installers: Skilled mechanics having minimum 5 years experience in the Work specified and having an understanding of the design principles of air barrier. Must be trained by Manufacture or recognized body or association specializing in this field.

.2 The air barrier Contractor shall submit at time of tender copy of their Quality Control Program including daily testing and inspection in accordance with ASTM E 1186, ASTM D4541 and CMCH/OAA Guideline for Delivering Effective Air Barrier Systems. Daily records to be submitted on a weekly basis. The Air/Vapour Barrier shall be installed by one trade, and shall ensure continuity between all of the building envelope assemblies and systems.

.3 Pre-installation meeting: Before commencing the Work of this Section, arrange a Site meeting attended by the Contractor, this Section, the Contract Administrator, and the material manufacturers' qualified representative. Discuss surface conditions, application procedures, suitability of materials and alternative recommendations.

1.2 Submittals

.1 Samples: Two 150 mm x 150 mm (6" x 6") samples of sheet air barriers.

.2 Shop Drawings and Product Data submitted to the Contract Administrator at least 21 days before the preinstallation. No preinstallation conference will be held and no material shall be applied until submittals are complete and released for construction.

.3 Product Data: For each type of product indicated. Include technical data; certified test results; manufacturer's printed instructions for evaluating, preparing and treating substrate; and installation instructions, including temperature and other limitations of installation.

.4 Shop Drawings: Show locations and extent of air/vapor barrier and details of intersections with other envelope systems and materials; details of membrane counter-flashings; details for construction of inside and outside corners; and details showing how expansion and control joints will be bridged. Identify materials, primers, sealers, support materials and other items detailed, including manufacturer’s product names. Show relationship to adjacent materials, sequence of installation and materials, and methods for sealing penetrations. Shop drawing shall include connection details between the air/vapor barrier and for the following exterior envelope components as applicable to the project:

.1 Aluminum-framed entrances, storefronts and curtain walls.

.2 Wall and roof assemblies.

.3 Wall penetrations by pipes, ducts and conduits.

.4 Control joint details in gypsum based sheathing, CMU, and plywood substrates, as applicable.

.5 Hollow metal door frames, mechanical louvers and vent penetrations.

.5 Product Certificates: For air/vapor barrier system, certifying compatibility of air/vapor barrier system and accessory materials with Project materials that connect to or that come in contact with the air/vapor barrier system; signed by product manufacturer.

.6 Qualification Data: For Installer signed by manufacturer certifying that Installers comply with requirements.

.7 Product Test Reports: From a qualified independent testing agency indicating and interpreting test results of air/vapor barrier system for compliance with requirements, based on comprehensive testing of current air/vapor barrier system in accordance with ASTM E 2178.

.8 Daily Reports: Installer shall maintain daily reports at the site. Copies of reports shall be submitted

1.3 Performance Requirements

.1 Air/Vapor Barrier: Shall be designed and constructed as a continuous air barrier to control air leakage into, or out of the conditioned space, and to act as a watertight barrier to discharge to the outside any incidental condensation or water penetration. Air/vapor barrier membrane shall accommodate movements of building materials by providing expansion and control joints as required, with appropriate air seal materials at such locations, changes in substrate and perimeter conditions.

.2 Barrier shall be continuous with all joints made air-tight and shall have the following characteristics: 1. Air Permeability Material: Shall not exceed 0.02 L/(s·m2) measured at an air pressure difference of 75 Pa."when tested in accordance with ASTM E 283.

.3 Air Permeability of the Assembly: Shall not exceed 0.05 L/(s·m2) measured at an air pressure difference of 75 Pa."when tested in accordance with ASTM E 283

.4 Shall be capable of withstanding positive and negative combined design wind, fan and stack pressures on envelope without damage or displacement; shall transfer load to structure; and shall not displace adjacent materials under full load.

1.4 Sample Installation

.1 Provide a one building module representative sample installation on-site at location directed by Contract Administrator. Include a sample of the condition of the barrier edge at concrete and at metal showing typical fastenings, a barrier to barrier joint and a deflection provision, at window junction. Modify or replace sample installations as directed to obtain approval. Accepted sample installation shall form the standard for remaining Work and may form part of the Work.

1.5 Delivery, Storage, and Handling

.1 Deliver materials in factory wrapped rolls with labels indicating manufacturer and trade name, material type, thickness, roll width and area.

.2 Protect materials from direct exposure to sunlight and physical damage.

1.6 Coordination

.1 Coordinate installation of sheet air-vapour barrier with work of other Sections to achieve an air and vapour tight building envelope.

1.7 Quality Control

.1 Perform one adhesion test for each 100 sq.m., or fraction thereof, for wall area receiving work of this Section.

.2 Do adhesion test in accordance with ASTM D4541.

.1 Minimum result: 110 kPa

1.8 Quality Assurance

.1 The City may engage and pay for the services of a testing and inspection agency to perform tests in accordance with ASTM E783 and E1186.

2. PRODUCTS

2.1 Materials

.1 Air/Vapour Barrier System: Two part, self-curing, synthetic rubber based liquid applied air/vapour barrier, free of solvents, isocyanates and bitumen, complete with accessories products as required, Perm-A-Barrier Liquid by Grace Construction Products

.1 Transition Menbrane: Self-adhering, 1 mm (40 mils) thick membrane consisting of 0.9 mm (36 mils) of self-adhesive rubberized asphalt integrally bonded to 0.1 mm (4 mil) of cross-laminated, high-density polyethylene film, with disposable silicone-coated release paper, Perm-A-Barrier Wall Membrane by Grace Construction Products.

.2 Flexible Membrane Wall Flashing: Self-adhering, 1 mm (40 mils) thick membrane consisting of 0.8 mm (32 mils) of self-adhesive rubberized asphalt integrally bonded to 0.1 mm (4 mil) of cross-laminated, high-density polyethylene film, with disposable silicone-coated release paper, Perm-A-Barrier Wall Flashing by Grace Construction Products.

.3 Primer and Mastic: As recommended by system manufacturer to suit conditions.

.4 Substrate Reinforcing: As recommended by the system manufacturer.

3. EXECUTION

3.1 Preparation

.1 Free surfaces receiving work of this Section of dust, mud, loose mortar, wires, fins, metal projections or any other substances that might prevent placement and bonding of a continuous film or cause damage to the membrane.

.2 Primer Prime substrates using appropriate primers. Apply primer at a recommended rate. Apply multiple coats if required to achieve required bond to substrates, let dry between coats.

.3 Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods that are acceptable to manufacturer of the fluid-applied waterproofing.

.4 Sheathing Panels: Ensure that sheathing panels are sufficiently stabilized with corners and edges fastened with appropriate screws.

.1 Apply 75mm wide, reinforced self-adhesive tape or fiberglass mesh tape over board joints. Fill gaps greater than 6mm with mastic or caulk.

.2 Allow sufficient time to fully cure before application of tape and membrane.

.5 Masonry and Concrete: Fill voids and holes, particularly in the mortar joints, with a lean mortar mix, non-shrinking grout or parge coat.

.6 Construction and Control Joints: Treat joints and install flashing as recommended by manufacturer.

4. INSTALLATION

.1 Apply work in strict conformance with manufacturer's installation recommendations.

.2 Liquid Applied Membrane

.1 Spray or trowel apply a continuous uniform film at min. 1.6 mm wet film thickness using multiple, overlapping passes.

.2 When spraying use alternating horizontal and vertical passes to ensure even thickness and coverage.

.3 When spraying use high pressure, multi-component, airless spray equipment approved by material manufacturer.

.4 Carry membrane into any openings a minimum of 50 mm.

.5 Seal all masonry ties and other penetrations as work progresses.

.6 Allow membrane to cure to tack free condition.

.3 Transition Membrane

.1 Ensure applied membrane is cured to tack-free, apply transition membrane with a minimum overlap of 75mm onto each surface at beams, columns and joints.

.2 Tie in to window and door frames, roof and floor intersections, corners and changes in substrate.

.3 Use pre-cut, easily handled lengths for each location.

.4 Remove release paper and position membrane against surface by pressing firmly into place by hand roller.

.5 Overlap adjacent pieces 50 mm and roll all seams with a hand roller.

.6 Seal top edge of flashing with termination mastic.

.4 Flexible Membrane Wall Flashing

.1 Precut pieces of flashing to easily handled lengths for each location.

.2 Remove release paper and position flashing carefully before placing it against the surface by pressing firmly into place by hand roller. Fully adhere flashing to substrate to prevent water from migrating under flashing.

.3 Overlap adjacent pieces 50 mm and roll all seams with a hand roller.

.4 Trim bottom edge 13 mm back from exposed face of the wall. Ensure that flashing is concealed permanently from sunlight.

.5 At heads, sills and flashing terminations, turn up ends a minimum of 50 mm and make careful folds to form an end dam, with the seams sealed.

.6 Seal top edge of flashing with termination mastic.

.7 Do not allow the rubberized asphalt surface of the flashing membrane to come in contact with poly-sulfide sealants, creosote, uncured coal tar products, EPDM and other incompatible materials.

5. PROTECTION

.1 Protect installed work immediately from the effects of sunlight and from damage during subsequent construction.

6. INSPECTION

.1 Do not cover any portion of the air-vapour barrier until it has been inspected by the Contract Administrator or by an inspection agency appointed by the Contract Administrator.

END OF SECTION