Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB)

1.2 SUBMITTALS

.1 Manufacturer's Instructions: Provide to indicate special handling criteria, installation sequence, and cleaning procedures.

1.3 PRODUCT DATA

.1 Submit product data in accordance with Section 01330 - Submittal Procedures.

.2 Submit WHMIS MSDS - Material Safety Data Sheets.

.3 Submit product data sheets for sheet vapour retarders. Include:

.1 Product characteristics.

.2 Performance criteria.

.3 Limitations.

Part 2 Products

2.1 SHEET VAPOUR BARRIER – ROOF MEMBRANE

.1 60-mil minimum thickness reinforced EPDM membrane with stripped-in lap seams.

2.2 SHEATHING PAPER

.1 Asphalt saturated paper, with no visible markings on paper surface.

.2 Acceptable material:

.1 Davis Wire Asphalt Saturated Paper

.2 Super Jumbo Tex 60 Minute

.3 Similar Approved

2.3 ACCESSORIES

.1 Joint sealing tape: air resistant pressure sensitive adhesive tape, type recommended by vapour barrier manufacturer, 63 mm wide, black

.2 Sealant: non-skinning, non-drying compound.

.3 Staples and nails: galvanized steel staples minimum 12 mm long to CSA B111.

.4 Moulded box vapour barrier: factory-moulded polyethylene box for use with recessed electric switch and outlet device boxes.

Part 3 Execution

3.1 INSTALLATION VAPOUR BARRIER

.1 Ensure services are installed and inspected prior to installation of retarder.

.2 Use sheets of largest practical size to minimize joints.

.3 Install continuous vapour barrier at inside face of exterior wood framed building elements unless otherwise indicated.

.4 Installed vapour barrier to form a complete and continuous envelope, properly sealed at all joints, fastenings and penetrations, effectively resisting moisture migration.

.5 All penetrations through vapour barrier, unless clearly detailed on drawings, must be approved by Contract Administrator.

.6 To ensure continuity of vapour barrier at all locations, install strips of vapour barrier of sufficient width at intersecting walls, on top of walls at joists bearings and at other locations where subsequent work would prevent installation of continuous vapour barrier.

.7 Place vapour barrier joints over solid backing, lapped one full stud or joist space and sealed with sealant between sheets. Where vapour barrier is applied to top of roof deck or floor sheathing, lap joints minimum 150 mm and seal with sealant between sheets.

.8 At door and window openings cut `X` at , carry material onto sill, head and jamb framing members, staple in place and seal framing.

.9 At electrical outlets and boxes located in exterior building elements, provide preformed polyethelene box. Seal vapour barrier to box and seal between electrical wires and boxes with sealant to maintain continuity of barrier.

.10 Inspect for continuity. Repair punctures and tears with sealing tape before work is concealed.

.11 Do not cover up any area until Contract Administrator has inspected and accepted installation of vapour barrier.

3.2 SHEATHING PAPER

.1 Install at exterior walls and where indicated on drawings.

.2 Installed barrier to be continuous and complete, lapped and taped at joints, to form an effective barrier against air infiltration and exfiltration.

.3 At exterior walls, install over plywood sheathing. Staple or nail air barrier 300 mm o.c.; do not place seams at corners. Cut `X` at window at door openings and fasten material to sill, head and jambs and seal.

3.3 PERIMETER SEALS

.1 Seal perimeter of sheet vapour barrier as follows:

.1 Apply continuous bead of sealant to substrate at perimeter of sheets.

.2 Lap sheet over sealant and press into sealant bead.

.3 Install staples through lapped sheets at sealant bead into wood substrate.

.4 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.4 LAP JOINT SEALS

.1 Seal lap joints of sheet vapour barrier as follows:

.1 Attach first sheet to substrate.

.2 Apply continuous bead of sealant over solid backing at joint.

.3 Lap adjoining sheet minimum 150 mm and press into sealant bead.

.4 Install staples through lapped sheets at sealant bead into wood substrate.

.5 Ensure that no gaps exist in sealant bead. Smooth out folds and ripples occurring in sheet over sealant.

3.4 ELECTRICAL BOXES

.1 Seal electrical switch and outlet device boxes that penetrate vapour barrier as follows:

.1 Install moulded box vapour barrier. Wrap boxes with film sheet providing minimum 300 mm perimeter lap flange.

.2 Apply sealant to seal edges of flange to main vapour barrier and seal wiring penetrations through box cover.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 American Society for Testing and Materials International, (ASTM)

.1 ASTM C919-02, Standard Practice for Use of Sealants in Acoustical Applications.

.2 ASTM C90-05, Standard Specification for Elastomeric Joint Sealants.

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.3 State of California's South Coast Air Quality Management District (SCAQMD) Rule #1168, June 2006.

1.2 SUBMITTALS

.1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.

.2 Manufacturer's product to describe:

.1 Caulking compound.

.2 Primers.

.3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.

.3 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.4 Submit duplicate samples of each type of material and colour.

.5 Cured samples of exposed sealants for each colour where required to match adjacent material.

.6 Submit manufacturer's instructions in accordance with Section 01 33 00 - Submittal Procedures.

.1 Instructions to include installation instructions for each product used.

1.3 DELIVERY, STORAGE, AND HANDLING

.1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements.

.2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with ground or floor.

1.4 PROJECT CONDITIONS

.1 Environmental Limitations:

.1 Do not proceed with installation of joint sealants under following conditions:

.1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.

.2 When joint substrates are wet.

.2 Joint-Width Conditions:

.1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

.3 Joint-Substrate Conditions:

.1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

1.5 ENVIRONMENTAL REQUIREMENTS

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.

.2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.

.3 Ventilate area of work as directed by Contract Administrator by use of approved portable supply and exhaust fans.

1.6 QUALITY ASSURANCE

.1 Perform the work by experienced and skilled mechanics thoroughly trained and competent in the use of caulking and sealing equipment and the specified materials with at least five years experience.

.2 Arrange with the caulking and sealant manufacturers for a visit at the job site by one of their technical representatives before beginning the caulking and sealing installation to discuss with the Contractor and the Contract Administrator the procedures to be adopted, to analyse site conditions and inspect the surfaces and joints to be sealed, in order that type of sealant recommendations may be made for typical joint configuration.

.3 Discuss the following items and provide a written report indicating:

.1 Sealants and caulking materials selected for use from those specified.

.2 Surface preparation requirements;

.3 Priming and application procedures;

.4 Verification that sealants and caulking are suitable for purposes intended and joint design;

.5 Sealants and caulkings are compatible with other materials and products with which they come in contact including but not limited to sealants provided under other Sections, insulation adhesives, bitumens, block, concrete, metals and metal finishes.

.6 Verification that sealant and caulking are suitable for temperature and humidity conditions at time of application and will not stain adjacent surfaces;

.7 Recommended sealant for each type of joint configuration;

.8 Joint design;

.9 Anticipated frequency and extent of joint movement;

.10 Number of beads to be used in the sealing operation;

.11 Suitability of durometer hardness and other properties of material to be used;

.12 Weather conditions under which work will be done.

Part 2 Products

2.1 SEALANT MATERIALS

.1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.

.2 When low toxicity caulks are not possible, confine usage to areas which offgas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize offgas time.

.3 Where sealants are qualified with primers use only these primers.

.4 The VOC content of adhesives, sealants and sealant primers used must be less than the VOC content limits of the State of California’s South Coast Air Quality Management District (SCAQMD) Rule #1168, June 2006.

2.2 SEALANT MATERIAL DESIGNATIONS

.1 Silicones One Part '3':

.1 To ASTM C919-02 and ASTM C920-05, primerless, Type S, Grade NS, Class 50, 100, Non-Sag, SWRI validated. Polysulfide Two Part '1B'.

.2 Acoustical Sealant '6': One part silicone to ASTM C919-02 and ASTM C920-05, primerless, Type S, Grade NS, Class 25, SWRI validated Ecologo certified maximum VOC 60 g/L.

.3 Exterior glazing sealant '10': one part silicone to ASTM C920-05, Type S, Grade NS, Class 50.

.4 Interior glazing sealant '10': one part silicone to ASTM C920-05, Type S, Grade NS, Class 25.

.5 Silicones One Part '11': to ASTM C919 and C920, primerless, Type S, Grade NS, Class 25, SWRI validated, Ecologo certified maximum VOC 60 g/l.

.6 Preformed Compressible and Non-Compressible back-up materials:

.1 Polyethylene, Urethane, Neoprene or Vinyl Foam:

.1 Extruded closed cell foam backer rod.

.2 Size: oversize 30 to 50 %.

.2 Neoprene or Butyl Rubber:

.1 Round solid rod, Shore A hardness 70.

.3 High Density Foam:

.1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m3 density, or neoprene foam backer, size as recommended by manufacturer.

.4 Bond Breaker Tape:

.1 Polyethylene bond breaker tape which will not bond to sealant.

.7 Sealant for fireproofing; where cables, conduits, pipes and ducts pass through floors and fire-rated walls, pack space between wiring and sleeve full with penetrating foam sealing system, ULC listed meeting CAN4-S115-M85 and ASTM E814.

.8 Colours: Colours shall be selected from manufacturer's standard colour range. Colours to match material/background colour upon which they occur. Final colour selection by Contract Administrator.

.9 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.

.10 When low toxicity caulks are not possible, confine usage to areas which off gas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off gas time.

.11 Where sealants are qualified with primers use only these primers.

2.3 SEALANT SELECTION

.1 Perimeters of exterior openings where frames meet exterior facade of building: Designations, 3.

.2 Expansion and control joints in exterior surfaces of walls: Designations 3.

.3 Coping joints and coping-to facade joints: Designations 3.

.4 Exterior joints in horizontal wearing surfaces (as itemized): Designations 3.

.5 Seal interior perimeters of exterior openings as detailed on drawings: Designations 3.

.6 Control and expansion joints on the interior of exterior surfaces walls: Designations 3.

.7 Interior control and expansion joints in floor surfaces: Designations 3.

.8 Perimeters of interior frames, as detailed and itemized: Designations 3.

.9 Perimeter of bath fixtures (e.g. sinks, tubs, urinals, stools, waterclosets, basins, vanities): Designations 11.

.10 Joints in washrooms, janitors room etc Designations 11.

.11 Exposed interior control joints in drywall: Designations 3.

.12 Joints in polyethylene and where acoustical sealant is specified: Designations 6.

.13 Exposed interior control joints in drywall: Designations 3.

.14 Joints in polyethylene and where acoustical sealant is specified: Designations 6.

.15 Sealants for glazing: Designations 10.

2.4 JOINT CLEANER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.2 Primer: as recommended by manufacturer.

Part 3 Execution

3.1 PROTECTION

.1 Protect installed Work of other trades from staining or contamination.

3.2 SURFACE PREPARATION

.1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.

.2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure joint surfaces are dry and frost free.

.5 Prepare surfaces in accordance with manufacturer's directions.

3.3 PRIMING

.1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.4 BACKUP MATERIAL

.1 Apply bond breaker tape where required to manufacturer's instructions.

.2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 MIXING

.1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.5 APPLICATION

.1 Sealant:

.1 Apply sealant in accordance with manufacturer's written instructions.

.2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.

.3 Apply sealant in continuous beads.

.4 Apply sealant using gun with proper size nozzle.

.5 Use sufficient pressure to fill voids and joints solid.

.6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.

.7 Tool exposed surfaces before skinning begins to give slightly concave shape.

.8 Remove excess compound promptly as work progresses and upon completion.

.2 Curing:

.1 Cure sealants in accordance with sealant manufacturer's instructions

.2 Do not cover up sealants until proper curing has taken place.

.3 Cleanup:

.1 Clean adjacent surfaces immediately and leave Work neat and clean.

.2 Remove excess and droppings, using recommended cleaners as work progresses.

.3 Remove masking tape after initial set of sealant.

END OF SECTION