Part 1 General

1.1 REFERENCES

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

- .1 ASTM C208, Specification for Cellulosic Fibre Insulating Board.
- .2 ASTM C591, Standard Specification for Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation.
- .3 ASTM C612, Standard Specification for Mineral Fibre Block and Board Thermal Insulation.
- .4 ASTM C726, Standard Specification for Mineral Fibre Roof Insulation Board.
- .5 ASTM C728, Standard Specification for Perlite Thermal Insulation Board.
- .6 ASTM C1126, Standard Specification for Faced or Unfaced Rigid Cellular Phenolic Thermal Insulation.
- .7 ASTM C1289-, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- .8 ASTM E96/E96M, Standard Test Methods for Water Vapour Transmission of Materials.

.2 Canadian Gas Association (CGA)

- .1 CAN/CGA-B149.1, Natural Gas and Propane Installation Code Handbook.
- .2 CAN/CGA-B149.2, Propane Storage and Handling Code.

.3 Canadian General Standards Board (CGSB)

- .1 CGSB 71-GP-24M, Adhesive, Flexible, for Bonding Cellular polystyrene Insulation.

.4 Underwriters Laboratories of Canada (ULC)

- .1 CAN/ULC-S604, Standard for Type A Chimneys.
- .2 CAN/ULC-S701, Standard for Thermal Insulation, Polystyrene, Boards and Pipe Coverings.
- .3 CAN/ULC-S702, Standard for Thermal Insulation, Mineral Fibre, for Buildings.
- .4 CAN/ULC-S704, Standard for Thermal Insulation Polyurethane and Polyisocyanurate, Boards, Faced.

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

- .1 Material Safety Data Sheets (MSDS).

1.2 SUBMITTALS

.1 Product Data:

- .1 Submit manufacturer's printed product literature, specifications and data sheet.

.2 Manufacturer's Instructions:

- .1 Submit manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

.1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

Part 2 Products

2.1 INSULATION

.1 Board insulation: expanded polystyrene board to CAN/ULC-S701, Type 3, thickness as indicated on Drawings, ship lapped edges. Acceptable material: Styrofoam Cavitymate or approved equivalent in accordance with B6.

2.2 ACCESSORIES

.1 Fasteners: concrete anchors with flat discs or washers, for attachment of insulation to concrete surfaces

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSTALLATION

.1 Install insulation after building substrate materials are dry.

.2 Install insulation to maintain continuity of thermal protection to building elements and spaces. Fit insulation tight around electrical, plumbing and heating pipes and ducts, around exterior doors and windows and other penetrations and protrusions. Cut and trim insulation neatly to fit spaces.

.3 Install insulation boards in parallel rows. Butt joints tightly, offset vertical joints. Interlock boards at corners. Use longest pieces possible to reduce number of joints.

.4 Install insulation boards on outer surface of inner wythe of wall cavity with plastic insulation clips over masonry ties to hold insulation tight to backup wall. Install boards horizontally between masonry ties, with horizontal joints centred on ties.

.5 Install insulation over foundation waterproofing with concrete anchors complete with nailing discs or washers. Provide a minimum of five (5) anchors per 600 x 1200 mm of insulation board. Provide additional anchors spaced at 300 mm on centre around perimeter of openings, corners and abutments. Ensure concrete anchors are securely seated. Replace loose fasteners or provide additional fastener adjacent to loose fasteners. Install insulation to maintain continuity of thermal protection to building elements and spaces.

.6 Fit insulation tight around electrical boxes, plumbing and heating pipes and ducts, around exterior doors and windows and other protrusions.

.7 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures.

.8 Cut and trim insulation neatly to fit spaces. Butt joints tightly, offset vertical joints. Use only insulation boards free from chipped or broken edges. Use largest possible dimensions to reduce number of joints.

.9 Offset both vertical and horizontal joints in multiple layer applications.

3.3 EXAMINATION

.1 Examine substrates and immediately inform Contract Administrator in writing of defects.

.2 Prior to commencement of work ensure:

.1 Substrates are firm, straight, smooth, dry, free of snow, ice or frost, and clean of dust and debris.

3.4 PERIMETER FOUNDATION INSULATION

.1 Extend boards to underside of perimeter foundation grade beam as indicated. Install on exterior face of perimeter foundation wall with adhesive as recommended by insulation manufacturer.

3.5 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 REFERENCES

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

.1 ASTM C553, Specification for Mineral Fibre Blanket Thermal Insulation for Commercial and Industrial Applications.

.2 ASTM C665, Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

.3 ASTM C1320, Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.

.2 Canadian Gas Association (CGA)

.1 CAN/CGA-B149.1, Natural Gas and Propane Installation Code Handbook.

.2 CAN/CGA-B149.2, Propane Storage and Handling Code.

.3 Canadian Standards Association (CSA International)

.1 CSA B111, Wire Nails, Spikes and Staples.

.4 Underwriters Laboratories of Canada (ULC)

.1 CAN/ULC-S604, Type A Chimneys.

.2 CAN/ULC-S702, Standard for Mineral Fibre Insulation.

1.2 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer's printed product literature, specifications and data sheets.

.2 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

.1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

Part 2 Products

2.1 INSULATION

.1 Batt and blanket mineral fibre insulation: to CAN/ULC-S702, Type 1 – no membrane. Thickness indicated on Drawings.

2.2 ACCESSORIES

.1 Insulation clips:

.1 Impale type, perforated 50 x 50 mm cold rolled carbon steel 0.8 mm thick, adhesive back, spindle of 2.5 mm diameter annealed steel, length to suit insulation, 25 mm diameter washers of self locking type.

.2 Nails: galvanized steel, length to suit insulation plus 25 mm, to CSA B111.

.3 Staples: 12 mm minimum leg.

.4 Tape: as recommended by manufacturer.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSULATION INSTALLATION

.1 Install insulation to maintain continuity of thermal protection to building elements and spaces.

.2 Install insulation with factory applied vapour barrier facing warm side of building spaces. Lap ends and side flanges of membrane over framing members. Retain in position with staples installed as recommended by manufacturer. Tape seal butt ends and lapped side flanges. Do not tear or cut vapour barrier.

.3 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.

.4 Do not compress insulation to fit into spaces.

.5 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures.

3.3 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.162, Stucco and Masonry Coating, Emulsion Type.

.2 CAN/CGSB-19.24, Multicomponent, Chemical-Curing Sealing Compound.

.2 Canadian Standards Association (CSA)

.1 CAN/CSA-A5, Portland Cement.

.3 Underwriter's Laboratories of Canada (ULC)

.1 CAN/ULC-S101, Fire Endurance Tests of Building Construction and Materials.

.2 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.

.3 CAN/ULC-S134, Fire Test of Exterior Wall Assemblies.

.4 United States Federal Government Standard

.1 U.S. Federal Test 141A 6201.

1.2 PRODUCT DATA

.1 Submit product data sheets for system materials. Include product characteristics, performance criteria, limitations and colours.

1.3 SHOP DRAWINGS

.1 Submit shop drawings to indicate wall layout, details, connections, expansion joints, finish system, installation sequence, including interface with fascias, walls, air barriers, vapour retarders and other components.

1.4 SAMPLES

.1 Submit one 300 x 300 mm sample of finish coat in selected colour and texture on plywood backing for Contract Administrator's review and approval.

1.5 QUALIFICATIONS

.1 Submit qualifications of applicators for the Contract Administrator's approval prior to commencement of work.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's instructions.

.2 Protect base finish materials from freezing.

1.7 PROJECT/SITE ENVIRONMENTAL REQUIREMENTS

.1 Temperature, relative humidity, moisture content.

.1 Apply exterior finish system components at temperatures, relative humidity, and substrate moisture content and substrate temperature in accordance with manufacturer's written instructions.

.2 Maintain ambient temperature above 10 C during base coat application and until cured minimum 24 hours.

.3 Maintain ambient temperature above 10 C during finish coat application and until cured minimum 24 hours.

1.8 WARRANTY

.1 For work of this Section the warranty period is extended to 24 months.

.2 Contractor hereby warrants that exterior finish system will not leak or delaminate for the warranty period.

Part 2 Products

2.1 MATERIALS

.1 Water: clean, potable and free from deleterious matter, acids or alkalis.

.2 Sand: clean, coarse, sharp, well screened conforming to CSA A82.57.

.3 Cement: normal Portland Type 10 to CAN/CSA-A5.

.4 Metal lath: diamond mesh, 1.65 kg/m², galvanized.

.5 Tie wire: zinc coated annealed steel wire, minimum 16 gauge diameter.

.6 Cornerite: expanded 26 gauge sheet steel, 64 mm legs, galvanized finish.

.7 Stucco stops: square, 24 gauge galvanized sheet steel or pure zinc, perforated or expanded flanges.

.8 Concrete anchors: for attachment of metal lath to concrete and masonry surfaces. Hot dipped galvanized concrete/masonry anchors. Washers 1 mm thick x 25 mm diameter steel, galvanized. Gripcon Concrete Masonry Fastening System or equal in accordance with B6.

.9 Building paper: No.15 asphalt saturated felt to CSA A123.3.

.10 Colouring pigment: dry powder pigment for job mix in finish coat. Acceptable material Imasco Custom Colours. Colour generally matching brickwork, as selected by Contract Administrator.

2.2 MIXING

.1 Detergent, soap, or other additives in mixes not permitted.

.2 Proportion parts by volume. Measurement of ingredients including water shall be accurate and successive batches shall be proportioned alike.

.3 Adjust cement and lime content by volume based on strength, workability and finishing requirements.

.4 Scratch coat: 1 part cement; 3/4 to 1½ parts lime; 2½ to 4 parts sand (volume of sand per sum of cementitious material).

.5 Parging coat: 1 part cement; 3/4 to 1½ parts lime; 3 to 5 parts sand (volume of sand per sum of cementitious material. Add colouring agent to finish coat in strict conformance with manufacturer's instructions to produce coloured stucco to match approved sample. Accurately and consistently measure ingredients to provide consistent coloured mortar for all batches.Conditioner: mix in accordance with manufacturer's written instructions.

Part 3 Execution

3.1 EXAMINATION

.1 Inspect and verify condition of existing substrate surfaces for contamination, surface absorption, chalkiness, cracks, damage, deterioration, moisture content, moisture damage, and tolerances.

.2 Report conditions that might adversely affect exterior finish system installation in writing to the Contract Administrator.

.3 Proceed with Work only after receipt of written approval from the Contract Administrator.

3.2 PREPARATION

.1 Protection

.1 Protect adjacent surfaces from damage resulting from Work of this section.

.2 Protect finished Work from water penetration at end of each day or on completion of each section of Work.

.3 Protect installation from moisture for 48 hours minimum after completion of each portion of Work.

.2 Surface preparation

.1 Ensure environmental and site conditions are suitable for installation of system.

.2 Prepare new surfaces in accordance with manufacturer's written instructions.

3.3 INSTALLATION

.1 Install sheathing paper behind metal lath. Place sheets horizontally, overlapping upper sheet over lower to shed water.

.2 Install metal lath with long dimension of sheets at right angles to supports. Offset end laps in adjacent rows.

.3 Secure at 150 mm on centre along vertical lines running 400 mm apart.

.4 Lap sheets 12 mm at sides and 25 mm at ends. Side laps shall be secured at 400 mm on centre.

.5 At external corners, wrap metal lath around corner minimum of 400 mm. Reinforce with cornerite.

.6 At internal corners, fold wire through corner minimum 400 mm. Reinforce with cornerite.

.7 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces wherever possible. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges.

.8 Provide casing beads wherever parging terminates and abuts other surfaces and where specifically called for on Drawings.

.9 Scratch coat:

- .1 Apply full scratch coat in sufficient thickness with sufficient pressure to form positive bond. Cross scratch and allow to set.
- .2 Damp cure for not less than 48 hours. Permit to dry.

.10 Parging coat:

- .1 Apply parging coat on scratch coat no sooner than 48 hours after installation of scratch coat.
- .2 Apply over dampened scratch coat with sufficient pressure to form positive bond.
- .3 Bring out to grounds, straighten to true surface, and provide medium brush dash finish.
- .4 Damp cure for not less than 48 hours.

.11 Thickness of finish or top coats specified minimum thickness. Increase thickness as required to suit specified textured finishes.

- .1 Scratch coat: 12 mm
- .2 Finish coat: 6 mm
- .3 Total : 18 mm

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-51.33, Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction.

.2 CAN/CGSB-51.34, Vapour Barrier, Polyethylene Sheet, for Use in Building Construction.

1.2 SUBMITTALS

.1 Product Data:

.1 Submit manufacturer's printed product literature, specifications and datasheet and include:

.1 Product characteristics.

.2 Performance criteria.

.3 Limitations.

.2 Quality assurance submittals:

.1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.2 Instructions: submit manufacturer's installation instructions and comply with written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

Part 2 Products

2.1 SHEET VAPOUR BARRIER

.1 Polyethylene film: to CAN/CGSB-51.34, 0.15 mm thick.

2.2 ACCESSORIES

.1 Joint sealing tape: air resistant pressure sensitive adhesive tape, type recommended by vapour barrier manufacturer, 50 mm wide for lap joints and perimeter seals, 25 mm wide elsewhere.

.2 Sealant: acoustical sealant compatible with vapour retarder materials, recommended by vapour retarder manufacturer.

.3 Staples: minimum 6 mm leg.

.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

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

.2 Install sheet vapour retarder on warm side of exterior wall, ceiling, and floor assemblies to form continuous retarder.

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

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

3.2 EXTERIOR SURFACE OPENINGS

.1 Cut sheet vapour retarder to form openings and ensure material is lapped and sealed to frame.

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.

3.5 ELECTRICAL BOXES

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

.1 Install moulded box vapour barrier.

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

3.6 CLEANING

.1 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-19.13M, Sealing Compound, One Component, Elastomeric Chemical Curing.
- .2 CAN/CGSB-19.18M, Sealing Compound, One Component, Silicone Base Solvent Curing.
- .3 CAN/CGSB-19.24M, Multi-Component, Chemical Curing Sealing Compound.
- .4 CGSB 19-GP-14M, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing.

.2 NBCC 1995; Part 5 - Environmental Separation

.3 Sealant and Waterproofer's Institute - Sealant and Caulking Guide Specification.

1.2 SUBMITTALS

.1 Submit manufacturer’s product data sheets and installation instructions.

1.3 QUALITY ASSURANCE

.1 Perform Work in accordance with Sealant and Waterproofer's Institute - Sealant and Caulking Guide Specification requirements.

.2 Perform Work in accordance with [National Air Barrier Association - Professional Contractor Quality Assurance Program and requirements.

.3 Perform Work in accordance with Canadian Urethane Foam Contractor’s Association - Professional Contractor Quality Assurance Program.

.4 Maintain one copy of documents on site.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer’s written instructions.

1.5 ENVIRONMENTAL CONDITIONS

.1 Apply primers and membranes in dry weather and only when air and surface temperature are within manufacturer's recommended limits.

.2 For applications below recommended temperature consult manufacturer and do not proceed until approved by manufacturer or his representative.

1.6 SEQUENCING

.1 Sequence work to permit installation of materials in conjunction with related materials and seals.

Part 2 Products

2.1 MATERIALS

.1 Air barrier membrane: SBS modified bitumen sheet membrane fibreglass reinforced, top and bottom surface thermofusible plastic film, minimum 2.5 mm thick. Acceptable material: Soprema Sopraseal 60 F/F, Bakor Blueskin TG, IKO Aquabarrier TG.

.2 Primers, mastics and sealants: of type recommended by manufacturer, suitable for substrate and application.

.3 Flashing and stripping membranes: as recommended by air barrier membrane manufacturer.

Part 3 Execution

3.1 EXAMINATION

.1 Verify that surfaces and conditions are ready to accept the Work of this section.

.2 Ensure all surfaces are clean, dry, sound, smooth, continuous and comply with air barrier manufacturer’s requirements.

.3 Report any unsatisfactory conditions to the Contract Administrator in writing.

.4 Do not start work until deficiencies have been corrected. Commencement of Work implies acceptance of conditions.

3.2 PREPARATION

.1 Remove loose or foreign matter which might impair adhesion of materials.

.2 Ensure all substrates are clean of oil or excess dust; all masonry joints struck flush, and open joints filled; and all concrete surfaces free of large voids, spalled areas or sharp protrusions.

.3 Ensure all substrates are free of surface moisture prior to application of membrane and primer.

.4 Ensure metal closures are free of sharp edges and burrs.

3.3 INSTALLATION

.1 Install materials in accordance with manufacturer's instructions.

.2 Prime substrate surfaces in accordance with manufacturer's instructions using only materials approved for use with their products. Apply with good construction practice to maintain continuity of air barrier membrane over building elements.

.3 Overlap side and end laps minimum 50 mm. Stagger end laps minimum 300 mm in adjacent rows. Locate end joints minimum 300 mm from internal and external corners.

.4 Install sheets horizontally between masonry ties penetrating membrane. Overlap horizontal joints minimum 50 mm. Slit membrane at each tie and seal making airtight.

.5 Place membrane in position without stretching, taking care to avoid trapped air, creases or fishmouths. Ensure full contact and bond to substrates.

.6 Flash and seal around all penetrations and protrusions such as pipes, conduits, steel angle supports, masonry ties, anchors. Cut and fit membrane neatly and snug fitting, leave no gaps. Make airtight.

.7 Seal with mastic all difficult detail areas that do not allow easy installation of membrane. Make airtight.

.8 At rough openings cut air barrier membrane to form opening. Return membrane into opening and seal to rough bucks. Reinforce corners with additional piece of membrane cut and formed to seal corners.

.9 Overlap and seal air barrier membrane to vapour barriers and waterproofing membranes installed by other trades. Maintain continuity of building air/vapour barrier system over entire building.

.10 Inspect membrane for defects and poor workmanship before covering and make corrections immediately.

.11 Patch and repair misaligned or inadequately lapped seams, tears, punctures or fishmouths to the satisfaction of the Contract Administrator.

.12 Patch cuts, tears, and punctures by bonding an additional layer of air barrier membrane over damaged area. Patch shall extending minimum 150 mm in all directions from fault.

.13 Seal and make airtight.

3.4 PROTECTION OF WORK

.1 Do not permit adjacent work to damage work of this section.

.2 Ensure finished Work is protected from climatic conditions.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 American National Standards Institute (ANSI).

.1 ANSI B18.6.4, Thread Forming and Thread Cutting Tapping Screws and Metallic Drive Screws.

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

.1 ASTM D2369, Test Method for Volatile Content of Coatings.

.2 ASTM D2832, Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.

.3 ASTM D5116, Guide For Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products.

.3 Canadian General Standards Board (CGSB).

.1 CAN/CGSB-51.32, Sheathing, Membrane, Breather Type.

.2 CAN/CGSB-93.2, Prefinished Aluminum Siding, Soffits and Fascia, for Residential Use.

.3 CAN/CGSB-93.3, Prefinished Galvanized and Aluminum-Zinc Alloy Steel Sheet for Residential Use.

.4 CAN/CGSB-93.4, Galvanized and Aluminum-Zinc Alloy Coated Steel Siding Soffits and Fascia, Prefinished, Residential.

.5 CGSB 93.5, Installation of Metal Residential Siding, Soffits and Fascia.

.4 Canadian Standards Association (CSA International).

.1 CSA B111, Wire Nails, Spikes and Staples.

.5 Underwriters' Laboratories of Canada (ULC).

.1 CAN/ULC-S706, Wood Fibre Thermal Insulation for Buildings.

1.2 SUBMITTALS

.1 Product data: submit manufacturer's printed product literature, specifications and data sheets.

.2 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

.1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

Part 2 Products

2.1 SOFFIT & EXPOSED TRIM

.1 Soffit: to CAN/CGSB-93.2, Type B, Class 1, colour to match Vicwest Blue heron VW-6079, medium gloss, plain pattern surface, flat sheet 'V' crimped for stiffness, vented 0.1 m² of opening for every 30 m² of building area preformed with elongated slits and small perforations.

.2 Exposed trim: inside corners, outside corners, starter strip and trim of same material, colour and gloss as soffit, with fastener holes pre-punched.

2.2 FASTENERS

.1 Nails: to CSA B111, aluminum alloy, of type recommended by manufacturer.

2.3 CAULKING

.1 Sealants: in accordance with manufacturer’s recommendations.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSTALLATION

.1 Install soffit in accordance with CAN/CGSB-93.5M, and manufacturer's written instructions.

.2 Install continuous starter strips, inside and outside corners, trim, and flashings.

.3 Maintain joints true to line, tight fitting, hairline joints.

.4 Attach components in manner not restricting thermal movement.

.5 Install outside corners, fillers and closure strips with carefully formed and profiled work.

.6 Install soffit and fascia cladding as indicated.

.7 Caulk junctions with adjoining work with sealant.

3.3 CLEANING

.1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 REFERENCES

.1 Aluminum Association (AA).

.1 AA DAF-45, Designation System for Aluminum Finishes - 9th Edition.

.2 AA ASM-35, Specifications for Aluminum Sheet Metal Work in Building Construction, Section 5.

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

.1 ASTM A167, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

.2 ASTM A240/A240M, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

.3 ASTM A653/A653M, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.4 ASTM A792/A792M, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot Dip Process.

.5 ASTM B32, Standard Specification for Solder Metal.

.6 ASTM B370, Standard Specification for Copper Sheet and Strip for Building Construction.

.7 ASTM D523, Standard Test Method for Specular Gloss.

.8 ASTM D822, Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.

.3 Canadian General Standards Board (CGSB).

.1 CAN/CGSB-37.5, Cutback Asphalt Plastic Cement.

.2 CAN/CGSB-37.29, Rubber-Asphalt Sealing Compound.

.3 CAN/CGSB-51.32, Sheathing, Membrane, Breather Type.

.4 CAN/CGSB-93.1, Sheet Aluminum Alloy, Prefinished, Residential.

.4 Canadian Standards Association (CSA International).

.1 CAN/CSA A123.3, Asphalt Saturated Organic Roofing Felt.

.5 National Research Council Canada (NRC)/Institute for Research in Construction (IRC) - Canadian Construction Materials Centre (CCMC).

.1 CCMC, Registry of Product Evaluations.

1.2 SUBMITTALS

.1 Submit product data sheets.

.2 Submit shop drawings sealed by an Engineer registered in the Province of Manitoba indicating arrangements of sheets and joints, types and locations of fasteners and special shapes and relationship of panels to structural frame, and anchorage details to the Contract Administrator for review prior fabrication and installation.

.3 Prefinished roof deck supplier to design connections to substructure for 2.0 kPa uplift, or as required by NBCC if greater.

.4 Roof system fabricator is responsible for complete design and engineering of snow/ice guard system for sheet metal roofing. Guards shall be finished to match roof panels.

1.3 QUALITY ASSURANCE

.1 Roofing Contractor must be a member in good standing with the Roofing Contractors Association of Manitoba.

.2 The contractor is responsible for ensuring that the design, supply and total installation of this project are supervised and executed by fully trained and qualified personnel.

.3 Installer shall demonstrate at least five years experience in projects similar in scope.

.4 The materials and installation shall meet the applicable standards of the National Building Code, Underwriters Laboratories of Canada (ULC), the Canadian Standards Association (CSA) and any other applicable codes, standards and by-laws.

.5 Written confirmation of conformance with these standards shall be provided to The City.

1.4 GUARANTEE

.1 Provide a written guarantee, signed and issued in the name of The City of Winnipeg stating that the entire roofing system is guaranteed against leaking for a period of two (2) years from the date of completion.

Part 2 Products

2.1 SHEET METAL MATERIALS

.1 Marquis 450 roof panels as manufactured by VicWest Steel.

.2 Flynn Standing Seam complete with battens, or approved equal in accordance with B6.

.3 Roof panels:

- .1 Fabricated from 24 gauge galvanized sheet steel to ASTM A653M, Grade 230, with Z275 zinc coating.
- .2 Finish: factory precoated with high molecular polyester coating Colorite HMP, colour QC-16072 Charcoal, or as directed by Contract Administrator.
- .3 Colour sample to be approved by Contract Administrator.

.4 Metal flashings, trim, closures exposed to view: prefinished steel sheet of same gauge and finish as roof panels.

.5 Sheet metal accessory components not exposed to ground level view: galvanized steel sheet, minimum 24 gauge.

.6 Screws anchors: as recommended by roofing supplier. Use galvanized anchors, with length and size to meet roof system design.

.7 Deck closures: gauge and profile as recommended by manufacturer

2.2 WATERPROOF MEMBRANE

.1 Self-adhesive, modified bitumen sheet, minimum 1 mm (40 mils) thick, non-slip surface. Acceptable material: IKO Armour Gard Ice and Water Protector, W.R. Grace Ice and Water Shield; Domtar Eaveshield; Nordshield Water Stopper; Bakor Eave Guard; BPCO ProGard; EMCO Gripgard

2.3 FASCIA, GUTTERS AND DOWNSPOUTS

.1 Form fascia and trim of prefinished steel sheet of same material, thickness, finish and colour as roof panels.

.2 Form gutters and downspouts of prefinished steel sheet of same material, thickness, finish and colour as roof panels, conforming to sizes and profiles indicated.

.3 Form gutter liner of galvanized steel sheet, minimum 24 gauge, conforming to sizes and profiles indicated on Drawings. Form in full lengths to reduce number of joints. Seal joints against leakage.

.4 Provide goosenecks, outlets and necessary fastenings.

.5 For open type downspouts fabricate of prefinished steel sheet with same finish and colour on both sides of sheet. Prefinished sheet steel colour to match colour of clay brick veneer as closely as possible. Submit samples to Contract Administrator for review prior to ordering material

.6 Gutter hangers, purpose made, concealed type. Spikes and ferrules not permitted.

Part 3 Execution

3.1 WATERPROOF MEMBRANE INSTALLATION

.1 Install self-adhesive membrane in accordance with manufacturer's instructions.

.2 Roll out sheets and press firmly to substrate. As installation progresses roll with hand roller to ensure positive bond.

.3 Set first course along eaves. Overlap each succeeding course over lower. Side and end laps minimum 75 mm. Ensure full bond to roof deck and sealed at side and end laps. Avoid excessive bubbles and fish mouths.

.4 Flash and seal around openings and items penetrating roof deck. Cut and fit membrane neatly and snug fitting, leave no gaps. Seal with mastic sealant. Make water tight.

3.2 METAL ROOFING INSTALLATION

.1 Install metal roofing system in strict accordance with reviewed shop drawings and manufacturer's instructions.

.2 Install factory manufactured panels in longest practical lengths with special panels to suit valleys and penetrations. Provide a continuous double standard seam, mechanically locking the hold down clips into the seam.

.3 Provide notched and formed closures, to shed water, at changes in pitch and at peaks, ridges and eaves.

3.3 FIELD QUALITY CONTROL

.1 Inspection of roof application may be carried out by an independent agency selected by the Contract Administrator.

.2 Notify inspection agency minimum 48 hrs. prior to commencing roofing operations to arrange inspections. Permit agency full access to all portions of work.

.3 Note that the last inspection is to be a “final inspection”, carried out after all roofing is complete, including installation of equipment and openings, and shall be in the presence of the Contract Administrator and the Contractor.

3.4 TOUCH-UP AND CLEANING

.1 Touch up minor paint abrasions with touch-up paint provided by roof panel manufacturer to match colour of roof panels.

.2 Clean roof by dry-wiping.

.3 Leave job site completely clean.

END OF SECTION

Part 1 General

1.1 REFERENCES

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

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

.2 Canadian General Standards Board (CGSB)

.1 CGSB 19-GP-5M, Sealing Compound, One Component, Acrylic Base, Solvent Curing (incorporating Amendment No. 1).

.2 CAN/CGSB-19.13, Sealing Compound, One-component, Elastomeric, Chemical Curing.

.3 CGSB 19-GP-14M, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing.

.4 CAN/CGSB-19.17, One-Component Acrylic Emulsion Base Sealing Compound.

.5 CAN/CGSB-19.24, Multi-component, Chemical Curing Sealing Compound.

.3 General Services Administration (GSA) - Federal Specifications (FS)

.1 FS-SS-S-200, Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold Applied, for Portland Cement Concrete Pavement.

1.2 SUBMITTALS

.1 Submit product data.

.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 manufacturer's instructions.

.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 the manufacturer’s written instructions.

.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 ENVIRONMENTAL 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 5 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.

.4 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.

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

Part 2 Products

2.1 SEALANT MATERIALS

.1 Type 1 – Silicones One Part: to CAN/CGSB-19.13. Acceptable material: Dow Corning 795, GE Silpruf, Tremco Spectrum 2.

.2 Type 2 – Silicones One Part: to CAN/CGSB-19.22-M89 (Mildew resistant). Acceptable material: Dow Corning 786.

.3 Type 3 – Acrylic Latex One Part: to CGSB 19-GP-5M. Acceptable material: Tremco 100 Latex Caulk, GE Acrylasil Latex Caulk.

.4 Type 4 – Butyl: to CGSB 19-GP-14M. Acceptable material: Tremco Butyl Sealanthere

2.2 ACCESSORIES

.1 Preformed Compressible and Non-Compressible back-up materials.

.1 High-Density Foam. 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/m density, or neoprene foam backer, size as recommended by manufacturer.

.2 Bond Breaker Tape. Polyethylene bond breaker tape that will not bond to sealant.

.2 Joint cleaner: non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

.3 Primer: as recommended by manufacturer.

2.3 SEALANT SELECTION

.1 Perimeters of exterior openings where frames meet exterior facade of building: Sealant Type 1.

.2 Miscellaneous flashing joints and metal cladding: Sealant Type 1.

.3 Perimeter of washroom fixtures (e.g., sinks, urinals, water closets, vanities, etc.): Sealant Type 2.

.4 Interior paintable joints: Sealant Type 3.

.5 Bedding aluminum doorsills: Sealant Type 4.

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.

3.6 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