

Part 1 General

1.1 SECTION INCLUDES

- .1 Cold applied asphalt bitumen dampproofing.
- .2 Drainage panels and protective cover.

1.2 RELATED SECTIONS

- .1 Section 31 23 23 - Backfilling.
- .2 Section 03 30 00 - Cast-In-Place Concrete.
- .3 Section 07 21 15 - Insulation: Perimeter insulation

1.3 REFERENCES

- .1 ASTM D41 - Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
- .2 ASTM D449 - Asphalt Used in Dampproofing and Waterproofing.
- .3 NRCA (National Roofing Contractors Association) - Roofing and Waterproofing Manual.

1.4 QUALITY ASSURANCE

- .1 Applicator: Company specializing in performing the work of this section with minimum five years documented experience.

1.5 ENVIRONMENTAL REQUIREMENTS

- .1 Section 01 61 00: Environmental conditions affecting products on site.
- .2 Maintain ambient temperatures above 5 degrees C for 24 hours before and during application until membrane has cured.

Part 2 Products

2.1 COLD ASPHALTIC MATERIALS

- .1 Asphalt: Fibrated solvent type asphalt coating to Flintguard 710-11 as manufactured by Bakor.
- .2 Asphalt Primer: ASTM D41, compatible with substrate, 910-01 manufactured by Bakor.
- .3 Asphalt Cement: ASTM D2822 Type I.
- .4 Asphaltic Sealing Mastic: Solvent type fibrated plastic cement 810-21 manufactured by Bakor.

2.2 ACCESSORIES

- .1 Protection Board: Rigid insulation specified in Section 07 21 15.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify substrate surfaces are durable, free of matter detrimental to adhesion or application of dampproofing system.
- .2 Verify items which penetrate surfaces to receive dampproofing are securely installed.

3.2 PREPARATION

- .1 Protect adjacent surfaces not designated to receive dampproofing.
- .2 Clean and prepare surfaces to receive dampproofing in accordance with manufacturer's instructions.
- .3 Do not apply dampproofing to surfaces unacceptable to manufacturer or applicator.
- .4 Apply mastic to seal penetrations, small cracks, or minor honeycomb in substrate.

3.3 APPLICATION

- .1 Prime surfaces in accordance with manufacturer's instructions.
- .2 Apply cold bitumen with mop or roller.
- .3 Apply bitumen in one coat, continuous and uniform.
- .4 Apply from 50 mm below finish grade elevation to top of footings. .
- .5 Seal items projecting through dampproofing surface with mastic. Seal watertight.

3.4 INSTALLATION - PROTECTION BOARD

- .1 Place protection board (Insulation) directly against membrane; butt joints.
- .2 Apply protection board to substrate. Scribe and cut boards around projections, penetrations, and interruptions.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Board insulation at cavity wall construction, perimeter foundation wall, exterior walls.
- .2 Batt insulation.

1.2 RELATED SECTIONS

- .1 Section 04 20 00 - Unit Masonry: Cavity space for thermal board insulation.
- .2 Section 06 10 00 - Rough Carpentry.
- .3 Section 07 61 00 - Sheet Metal Roofing.
- .4 Section 07 4616 - Preformed Metal Siding.
- .5 Section 07 52 13 - SBS modified Bituminous Roofing.

1.3 REFERENCES

- .1 ASTM C578 - Preformed, Cellular Polystyrene Thermal Insulation.
- .2 ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.
- .3 ASTM C1013 - Membrane Faced Rigid Cellular Polyurethane Roof Insulation.
- .4 ASTM D2842 - Water Absorption of Rigid Cellular Plastics.
- .5 ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials.
- .6 UL 723 - Tests for Surface Burning Characteristics of Building Materials.

Part 2 Products

2.1 INSULATION MATERIALS

- .1 Rigid Insulation (foundation): CAN/ULC S701-97, Type 4, extruded cellular polystyrene, square edges; thickness as indicated on drawings
 - .1 Acceptable Manufacturers: Dow Chemical; Owens Corning.
- .2 Rigid insulation (walls): Polyisocyanurate Insulation CGSB 51-GP-21M; closed cell; foil faces; square edges; thickness as noted on drawings.
 - .1 Acceptable materials: Celotex or Firestone ISO.
- .3 Rigid Insulation (Sloped Metal Roof): CAN/ULC S701-97, Type 4, extruded cellular polystyrene, square edges; thickness as indicated on drawings
 - .1 Acceptable Manufacturers: Dow Chemical; Owens Corning.
- .4 Rigid insulation (Flat SBS Roof): Polyisocyanurate Insulation CGSB 51-GP-21M; closed cell; foil faces; square edges; thickness as noted on drawings.

- .1 Acceptable materials:
 - .1 Genflex Roofing Systems - Model Genflex Iso.
 - .2 Celotex – HyTherm AP
 - .3 Firestone – ISO 95+
 - .4 IKO - Ikootherm
- .5 Batt Insulation: ASTM C665; preformed glass fiber batt, roll, blanket; friction fit.
 - .1 Acceptable manufacturers:
 - .1 Owens Corning
 - .2 Johns Manville.
- .6 Batt Insulation (acoustic): ASTM C665; preformed glass fiber batt, roll, blanket; friction fit.
 - .1 Acceptable manufacturers:
 - .1 Owens Corning.
 - .2 Johns Manville.
- .7 Primer: Type recommended by insulation manufacturer.

2.2 ACCESSORIES

- .1 Protective Boards (foundation): PWF veneer core Plywood., 12 mm thick.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that substrate, adjacent materials, and insulation boards are dry and ready to receive insulation and adhesive.
- .2 Verify substrate surface is flat, free of honeycomb, fins, irregularities, materials or substances that may impede installation.
- .3 Verify insulation boards are unbroken, free of damage, with face membrane undamaged.
- .4 Verify surfaces within walls being insulated have been inspected and approved.

3.2 RIGID INSULATION - FOUNDATION PERIMETER

- .1 Fasten insulation and 12 mm pressure treated plywood protection board to foundation wall with Tapcon concrete fasteners with 25 mm dial washers, 6 per 600 mm x 2400 mm board.
- .2 Cut and fit insulation tight to protrusions or interruptions to the insulation plane.

3.3 RIGID INSULATION - EXTERIOR WALLS

- .1 Cavity Walls: Install insulation horizontally using the polyethylene insulation support component of the masonry tie system specified in Section 04 20 00.
- .2 Metal Wall Panels: Install insulation horizontally using Z channels placed 1200 mm o.c. vertically at insulation board joint locations.
- .3 Install 22 mm furring channels vertically to receive steel siding panels.
- .4 Place boards in a method to maximize contact bedding. Stagger end joints. Butt edges and ends tight to adjacent board and to protrusions.
- .5 Cut and fit insulation tight to protrusions or interruptions to the insulation plane.
- .6 Tape joints with foil tape.
- .7 Place 400 mm wide adhesive vapour sheet at perimeter of wall openings, from adhesive vapour retarder bed to window door frame. Tape seal in place to ensure continuity of vapour retarder and air seal.

3.4 RIGID INSULATION – ROOF

- .1 Refer to Section 07 61 00 for installation of insulation on sloped metal roof.
- .2 Refer to Section 07 52 13 for installation of insulation on flat SBS roof.

3.5 BATT INSULATION

- .1 Install batt insulation locations as noted on drawings without gaps or voids.
- .2 Fit insulation tight in spaces and behind exterior side of mechanical and electrical services leaving no gaps or voids.

3.6 ACOUSTIC INSULATION

- .1 Install acoustic insulation to walls indicated on drawings.
- .2 Fit insulation tight in spaces and tight to one side of mechanical and electrical services leaving no gaps or voids.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Sheet and sealant materials for controlling vapour diffusion.
- .2 Sheet air barriers.

1.2 RELATED SECTIONS

- .1 Section 06 10 00 - Rough Carpentry.
- .2 Section 07 52 13 - SBS Membrane Roofing: Rigid insulation at roof system.
- .3 Section 07 92 00 - Joint Sealant.

1.3 REFERENCES

- .1 ASTM C1193 - Standard Guide for Use of Joint Sealants.
- .2 ASTM E96 - Test Methods for Water Vapour Transmission of Materials.
- .3 ASTM C920 - Elastomeric Joint Sealants.
- .4 ASTM E283 - Test Method For Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Difference Across the Specimen..

1.4 SEQUENCING

- .1 Sequence Work to permit installation of materials in conjunction with other barrier materials and seals.
- .2 Do not install vapour barriers until items penetrating it are in place.

1.5 INSPECTION TESTING

- .1 Coordinate inspection of vapour barrier elements prior to vapour barrier system being covered up by other trades.
- .2 Testing of air / vapour barrier materials will be performed by an independent inspection firm appointed and paid for by the City. Testing will be performed so as to least encumber the performance of the work.
- .3 The City will pay for the cost of one (1) series of tests only, on the areas being evaluated. Pay for costs of additional testing as required due to improper performance of work.
- .4 When work of this section or portions of work are completed to own satisfaction, notify the testing firm to perform tests. Do not proceed with additional portion of work until results have been verified and approved.

- .5 If, during progress of Work, tests indicate that materials do not meet specified requirements, remove defective work, replace and retest at own expense, as directed by the Contract Administrator.

1.6 WARRANTY

- .1 Warranty: Include coverage of installed sealant and sheet materials which fail to achieve air tight seal, exhibit loss of adhesion or cohesion, or do not cure.

Part 2 Products

2.1 AIR/VAPOUR BARRIER

- .1 Membrane type (walls): Self Adhesive: SBS modified bitumen membrane reinforced with glass scrim; 1 mm thick minimum.
 - .1 Acceptable manufacturers: Blueskin SA, manufactured by Bakor; Perma Barrier manufactured by Grace Construction Products; Sealtight Air Shield by W.R.Meadows. Aquabarrier AVB by IKO.
 - .2 Primer to membrane manufacturers recommendations.

OR

- .2 Membrane type (walls): Torch applied: SBS modified bitumen membrane reinforced with glass scrim; 1 mm thick minimum.
 - .1 Acceptable manufacturers: Blueskin TG, manufactured by Bakor; Aquabarrier TG by IKO.
 - .2 Primer to membrane manufacturers recommendations.

2.2 MOISTURE BARRIER

- .1 Moisture Barrier: spun bonded polyolefin or polypropylene
 - .1 Acceptable materials:
 - .1 Tyvek Building Wrap manufactured by Dupont Canada.
 - .2 Typar Housewrap manufactured by Reemay Inc.
 - .3 Styrofoam Weathermate Plus manufactured by Dow Canada.

2.3 SEALANTS

- .1 Sheet vapour Barrier: sealant to membrane manufacturer's recommendations.
- .2 Film vapour barrier: acoustic sealant specified in Section 07 92 00.

2.4 ACCESSORIES

- .1 Tape: permanent acrylic adhering back, polypropylene, 3M Contractors Sheathing Tape.
- .2 Vapour Barrier transition strip: sheet vapour barrier, width to provide minimum 100 mm lap to both roof and wall vapour barriers.

- .3 Sealants: As recommended by membrane manufacturer

Part 3 Execution

3.1 EXAMINATION

- .1 Verify condition of substrate and adjacent materials are acceptable for application of the product.

3.2 PREPARATION

- .1 Remove loose or foreign matter which might impair adhesion.
- .2 Verify substrate surface is flat, free of honeycomb, fins, irregularities, materials or substances that may impede installation.
- .3 Clean and prime substrate surfaces to receive membrane and sealants in accordance with manufacturers' instructions.

3.3 INSTALLATION VAPOUR BARRIER – SHEET (self adhered)

- .1 Prime surfaces to membrane manufacturers recommendations.
- .2 Apply membrane to manufacturers recommendations.
- .3 Apply membrane horizontally starting at bottom of wall and weather lap 50 mm.
- .4 Lap ends 50 mm.
- .5 Roll membrane, including seam with hand roller to ensure full contact.
- .6 Seal membrane where it meets the substrate, at the end of the days work.
- .7 Install vapour barrier transition strip to parapet support prior to construction of parapets and lap wall vapour barrier 100 mm.

3.4 VAPOUR BARRIER – SHEET (torch applied)

- .1 Prime surfaces to membrane manufacturers recommendations.
- .2 Apply membrane to manufacturers recommendations.
- .3 Apply membrane horizontally starting at bottom of wall and weather lap 50 mm.
- .4 Cut membrane neatly around projections to form a tight seal. Seal area around any projections with application of sealant.
- .5 Install vapour barrier transition strip to parapet support prior to construction of parapets and lap wall vapour barrier 100 mm.

3.5 AIR BARRIER

- .1 Apply air barrier over exterior surfaces walls.
- .2 Lap minimum of 200 mm and seal with tape.
- .3 Fasten to framing or strapping at 600 mm on centre.
- .4 Seal to window and door frames. Seal to all penetrations in exterior walls.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Preformed metal siding system for walls with insulation, related flashings and accessory components.
- .2 Prefinished fascias.
- .3 Prefinished soffits.

1.2 RELATED SECTIONS

- .1 Section 07 28 00 - Air and Vapour Barriers.
- .2 Section 07 61 00 - Sheet Metal Roofing
- .3 Section 07 62 00 - Sheet Metal Flashing And Trim.

1.3 REFERENCES

- .1 ASTM A653/A653M - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 ASTM A755/A755M - Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process For Exterior Exposed Building Products.
- .3 ASTM A792/A792M - Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process.

1.4 SYSTEM DESCRIPTION

- .1 Siding System: Preformed and prefinished metal siding system of horizontal profile; site assembled including girts and subgirts, insulation and moisture barrier; exposed fasteners.
- .2 Soffits: Preformed and prefinished metal panels site assembled complete with suspension system and framing; concealed fasteners.
- .3 Fascia: preformed and prefinished metal panels site assembled including girts and framing system; concealed fasteners.

1.5 DESIGN REQUIREMENTS

- .1 Components: Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall. System to be designed to the NBC 2005 for a building importance category of post-disaster. Design shall be engineered by fabricator.
- .2 Maximum Allowable Deflection of Panel: 1/90 of span.

- .3 Movement: Accommodate movement within system without damage to components or deterioration of seals, movement within system; movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; deflection of structural support framing.
- .4 Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
- .5 Products: Provide continuity of thermal barrier at building enclosure elements in conjunction with thermal insulating materials.
- .6 Vapour Barrier: Provide continuity of vapour barrier at building enclosure elements in conjunction with vapour retarders specified in Section 07 28 00.
- .7 Air Seal: Provide continuity of air barrier seal at building enclosure elements in conjunction with air seal materials specified in Section 07 28 00.

1.6 SUBMITTALS FOR REVIEW

- .1 Section 01 33 00: Submission procedures.
- .2 Shop Drawings: Indicate dimensions, layout, joints, construction details, methods of anchorage. Shop drawings shall be sealed and signed by a Professional Structural Engineer experienced in design of this Work and licensed at the place where the Project is located.
- .3 Samples: Submit two samples of siding,, soffit and fascia, 200 x 200 mm in size illustrating finish colour, sheen, and texture.

1.7 QUALITY ASSURANCE

- .1 Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three (5) years documented experience.
- .2 Installer: Company specializing in performing the work of this section with minimum three (5) years documented experience.

1.8 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- .3 Store prefinished material off ground protected from weather, to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- .4 Prevent contact with materials which may cause discolouration or staining.

1.9 COORDINATION

- .1 Section 01 33 00: Coordinate work.

- .2 Coordinate the Work for installation of vapour Barrier and air barrier seals.
- .3 Coordinate the Work with installation of windows, louvres, and components or materials.

1.10 WARRANTY

- .1 Correct defective Work within a five (5) year period after Substantial Completion for degradation of panel finish including colour fading caused by exposure to weather.
- .2 Correct defective Work within a five (5) year period after Substantial Completion water tightness, and integrity of seals.

Part 2 Products

2.1 EXTERIOR SHEET MATERIALS

- .1 Aluminum-Zinc Alloy Coated Steel: Coating AZ 150 aluminum-zinc alloy coating; Galvalume finish..

2.2 INSULATION

- .1 Insulation: as specified in Section 07 21 15 .

2.3 ACCESSORIES

- .1 Gaskets: Manufacturer's standard type suitable for use with system, permanently resilient; ultraviolet and ozone resistant; colour as selected.
- .2 Sealants: Manufacturer's standard type suitable for use with installation of system; non-staining, non-skinning, non-shrinking and non-sagging; ultra-violet and ozone resistant; colour as selected.
- .3 Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized; fastener cap same colour as exterior panel. Exposed fasteners same finish as panel system.
- .4 Field Touch-up Paint: As recommended by panel manufacturer.
- .5 Bituminous Paint: Asphalt base.

2.4 COMPONENTS

- .1 Exterior Horizontal Siding: Minimum 0.76 mm thick steel stock, 22 mm deep corrugated profile; lapped edges.
- .2 Metal fascia panels: Min 0.76 mm prefinished steel stock to formed to match Vic West AD 300 R profile or Flynn FL-12-R; concealed fasteners. Galvalume finish
- .3 Metal soffit panels: Min 0.76 mm prefinished steel stock to formed to match Vic West AD 300 R profile or Flynn FL-12-R; concealed fasteners. Provide ; Galvalume finish

- .4 Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitred to required angles. Mitred internal corners to be back braced with precoated sheet stock to maintain continuity of profile.
- .5 Metal furring: 'Z' girts of thickness to withstand loading, galvanized.
- .6 Expansion Joints: Same material, thickness and finish as exterior sheets type, of profile to suit system.
- .7 Trim, Closure Pieces, Caps, Flashings, Facias, and Infills: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- .8 Anchors: Galvanized steel.

2.5 FABRICATION

- .1 Form sections true to shape, accurate in size, square, and free from distortion or defects.
- .2 Form pieces in longest practicable lengths.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that building framing members are ready to receive panel system.

3.2 INSTALLATION

- .1 Install metal siding system on walls and soffits in accordance with manufacturer's instructions.
- .2 Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint. Allow to dry prior to installation.
- .3 Fasten siding to structural supports; aligned, level, and plumb.
- .4 Locate joints over supports. Lap panel ends minimum 50 mm.
- .5 Provide expansion joints where indicated.
- .6 Use concealed fasteners unless otherwise approved by Contract Administrator.
- .7 Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

3.3 TOLERANCES

- .1 Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1.6 mm.
- .2 Maximum Variation from Plane or Location Indicated on Drawings: 6 mm.

3.4 CLEANING

- .1 Remove site cuttings from finish surfaces.
- .2 Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Modified bitumen membrane roofing, gypsum board sheathing, plywood sheathing, vapour barrier, insulation and base flashings.

1.2 RELATED SECTIONS

- .1 Section 05 31 00 - Metal deck.
- .2 Section 06 10 00 - Rough Carpentry.
- .3 Section 07 21 15 - Insulation
- .4 Section 07 28 00 - Air and Vapour Barriers.
- .5 Section 07 61 00 - Sheet Metal Roofing.
- .6 Section 07 62 00 - Sheet Metal Flashing and Trim
- .7 Section 09 21 16 - Gypsum Board Assemblies
- .8 Section 07 72 33 - Roof Hatches.

1.3 REFERENCES

- .1 CAN/CGSB-51.26-M86 – Urethane and Isocyanurate Boards, faced.
- .2 ASTM C 79-94 - Specification for Gypsum Sheathing Board.
- .3 ASTM C1002 - Steel Drill Screws for the Application of Gypsum Board.
- .4 CRCA (Canadian Roofing Contractors Association) "Roofing Specification"

1.4 SYSTEM DESCRIPTION

- .1 SBS Modified Bitumen Conventional Roofing System: Two ply membrane system with vapour barrier, gypsum sheathing, and insulation.

1.5 QUALITY ASSURANCE

- .1 Perform Work in accordance with CRCA Roofing and Waterproofing Manual and manufacturer's instructions.

1.6 QUALIFICATIONS

- .1 Manufacturer: Company specializing in manufacturing the products specified in this section with three years documented experience.
- .2 Applicator: Company specializing in performing the work of this section with three years experience and approved by system manufacturer.

1.7 REGULATORY REQUIREMENTS

- .1 Conform to applicable code for roof assembly fire hazard requirements.

1.8 MANUFACTURERS REPRESENTATIVE

- .1 The roofing material manufacturer shall delegate a representative to visit the work site at commencement of work and periodically during work in progress.
- .2 At all times the contractor shall permit and facilitate access to the work site and roofs to manufacturers representative.

1.9 INSPECTION / TESTING

- .1 Coordinate inspection of roof assembly.
- .2 Testing and inspection of roof installation will be performed by an independent inspection firm appointed and paid for by the City. Testing / inspection will be performed so as to least encumber the performance of the work.
- .3 The City will pay for the cost of inspection on the areas being evaluated. Pay for costs of additional inspections as required due to improper performance of work.
- .4 If, during progress of Work, tests indicate that materials do not meet specified requirements, remove defective work, replace and retest at own expense, as directed by the Contract Administrator.

1.10 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, protect, and handle products to site.
- .2 Deliver products in manufacturer's original containers, dry, undamaged, seals and labels intact.
- .3 Store products in weather protected environment, clear of ground and moisture.
- .4 Stand roll materials on end.

1.11 ENVIRONMENTAL REQUIREMENTS

- .1 Do not apply roofing membrane to damp or frozen deck surface.
- .2 Do not apply roofing membrane during inclement weather.
- .3 Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

1.12 COORDINATION

- .1 Coordinate the work with installing associated metal flashings as the work of this section proceeds.

1.13 FIRE PROTECTION

- .1 Adhere to manufacturers fire safety regulations.
- .2 At the end of each work day, survey roof with a heat detector gun to spot any smoldering or concealed fire. Workers must be on site minimum one hour after torch application. Do not apply torch directly to old and dry wood surfaces. Apply Soprema fire guard tape at all parapet and curb junctions, or where there is a risk of flame entering building components.
- .3 Maintain a clean site and have one approved ABC fire extinguisher within 6 meters of each roofing torch. Comply to all safety measures described in technical data sheets. Torches shall not be placed near combustible or flammable products.

1.14 WARRANTY

- .1 Provide a 10 year manufacturer's warranty.

Part 2 Products

2.1 MANUFACTURERS - MEMBRANE MATERIALS

- .1 Soprema Waterproofing Inc.
- .2 IKO Commercial Roofing.

2.2 MEMBRANE MATERIAL

- .1 Membrane composition : bitumen and SBS Polymer; Reinforced.
 - .1 Base sheet : Soprema Soprafix Base – 610; Composite polyester reinforcement; top side marked with 3 distinctive chalk lines to ensure proper roll alignment.
 - .1 Other acceptable product: IKO Fast-N-Stick.
 - .2 Base Sheet Flashing: Soprema Sopralene Flam180, Thermofusable surface both sides; 180 g/sq.m. non woven polyester reinforcement; 2 mm thick; top side marked with 3 distinctive chalk lines to ensure proper roll alignment.
 - .1 Other acceptable products; IKO Torchflex 180 - FF base.
 - .3 Membrane Cap Sheet and Cap Sheet Flashing: Soprema Soprafix Traffic Cap 660; Thermofusable bottom surface; granule top surface of grey colour; Composite reinforcement of non woven polyester and glass fibre grid.
 - .1 Other acceptable products: Torchflex 250 cap.

2.3 SHEET MATERIALS

- .1 Gypsum Sheathing: CSA A82.27; 12 mm thick; uncoated face, fire rated type.
- .2 Plywood sheathing: exterior grade 19 mm tongue and groove sheathing good one tow sides.

- .3 Vapour barrier (roof): self adhering membrane type, 0.1 mm thick, polyethylene and rubberized asphalt. Primer and Adhesive per Manufacturers recommendations.
Acceptable manufacturers:

- .1 Sopravapour by Soprema;
- .2 IKO MVP

2.4 BITUMINOUS MATERIALS

- .1 Rubberized sealant:
 - .1 Polyroof; one part rubberized asphalt.
 - .2 Sopramastic 200; synthetic plasticized with bitumen and solvents.

2.5 INSULATION

- .1 Insulation: ASTM C1013, polyisocyanurate foam with specially formulated facers.
 - .1 Genflex Roofing Systems - Model Genflex Iso.
 - .2 Celotex – HyTherm AP
 - .3 Firestone – ISO 95+
 - .4 IKO - Ikootherm
- .2 Tapered insulation ASTM C578 Type II, Molded expanded polystyrene board; manufactured by Plastispan.

2.6 FLASHINGS

- .1 Flexible Flashings: membrane manufacturer recommended flashing materials.

2.7 ACCESSORIES

- .1 Sheathing Fasteners: ASTM C1002, steel drill type, for mechanical attachment of gypsum sheathing to metal deck.
- .2 Insulation Fasteners: Appropriate for purpose intended and approved by Factory Mutual and system manufacturer; length required for thickness of material with metal washers.
- .3 Sealants: As recommended by membrane manufacturer.
- .4 Roof expansion joints: refer to Section 05805.
- .5 Paving slabs: 600 mm x 600 mm concrete paving slabs, manufactured by Barkman.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that surfaces and site conditions are ready to receive work.
- .2 Verify deck is supported and secured.

- .3 Verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains.
- .4 Verify deck surfaces are dry and free of snow or ice.
- .5 Verify roof openings, curbs, pipes, conduit, sleeves, ducts, and vents through roof are solidly set, and are in place.

3.2 PREPARATION - METAL DECK

- .1 Install gypsum sheathing on metal deck
- .2 Lay sheathing with long side at right angle to flutes; stagger end joints; provide support at ends.
- .3 Cut sheathing cleanly and accurately at roof breaks and protrusions to provide smooth surface.
- .4 Mechanically fasten sheathing to roof deck, in accordance with membrane manufacturer's instructions.
- .5 Install plywood sheathing to perimeter of deck under parapets.

3.3 VAPOUR BARRIER APPLICATION

- .1 Prime deck surface to membrane manufacturers recommendations
- .2 Apply vapour barrier to deck in accordance with manufacturers directions. Lap and seal seams.
- .3 Extend vapour Barrier under cant strips and blocking. Lap over vapour and air barrier of wall construction to provide continuity of vapour and air barrier envelope.

3.4 INSULATION APPLICATION

- .1 Ensure vapour Barrier is clean and dry.
- .2 Mechanically fasten tapered insulation topped with 19 mm plywood sheathing to locations indicated.
- .3 Attach isocyanurate insulation mechanically in conformance with manufacturers recommendations.
- .4 Fasteners shall be attached to steel deck upper flutes.
- .5 Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- .6 Apply no more insulation than can be covered with membrane in same day.

3.5 MEMBRANE APPLICATION

- .1 Apply membrane and primer in accordance with manufacturer's written instructions, latest edition.
- .2 Base sheet: mechanically fasten base sheet to manufacturers recommendations. Over lap 100 mm on sides and 150 mm on endlaps. Stagger end joints by minimum 300 mm.
- .3 Base sheet Flashing: Torch apply base sheet flashing in 900 mm widths lapping roofing 100 mm and side laps 75 mm.
- .4 Cap Sheet: Torch weld cap sheet to base sheet. Offset cap sheet 300 mm with base sheet. Side laps to be 100 mm and end laps to be 150 mm. Degranulate lapped surfaces
- .5 Cap sheet Flashing: install caps sheet flashing in 900 mm widths. Side laps to be 75 mm ; over laps to cap sheet to be 150 mm. Stagger base and cap sheet by 100 mm.
- .6 Extend membrane over vapour and air barrier of wall construction and seal.
- .7 Seal membrane around roof protrusions and penetrations.
- .8 Install waterproof cut-off to membrane at end of day's operation. Remove cut-off before resuming roofing.

3.6 FLASHINGS AND ACCESSORIES

- .1 Apply flexible sheet base flashings to seal membrane to vertical elements.
- .2 Coordinate installation of roof drains, curbs, and related flashings.
- .3 Coordinate installation of roof expansion joints.
- .4 Seal flashings and flanges of items penetrating or protruding through the membrane.

3.7 CLEANING

- .1 In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- .2 Repair or replace defaced or disfigured finishes caused by work of this section.

3.8 ROOF WALKWAYS

- .1 Place concrete paving slabs to locations shown on drawings. Set slabs on 25 mm extruded type 4 polystyrene, leave gaps between polystyrene for drainage.

3.9 PROTECTION

- .1 Protect building surfaces against damage from roofing work.

- .2 Where traffic must continue over finished roof membrane, protect surfaces.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Precoated Galvanized steel roofing system.
- .2 Counterflashings.
- .3 Integral gutters.
- .4 Integral fascias.

1.2 RELATED SECTIONS

- .1 Section 05 31 00 - Metal Deck.
- .2 Section 06 10 00 - Wood Blocking And Curbing: Wood blocking and battens for metal roofing substrate profiles.
- .3 Section 07 21 15 - Insulation: Rigid insulation under sheet metal roofing system.
- .4 Section 07 52 13 - SBS Modified Bitumen Membrane Roofing.
- .5 Section 07 62 00 - Sheet Metal Flashing And Trim.
- .6 Section 07 92 00 - Joint Sealants.

1.3 REFERENCES

- .1 ASTM A653/A653M - Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 ASTM D4586 - Asphalt Roof Cement, Asbestos-Free.
- .3 SMACNA - Architectural Sheet Metal Manual.
- .4 ASTM A792/A792M - Steel Sheet, 55% Aluminum-Zinc Alloy Coated by the Hot-Dip Process.

1.4 DESIGN REQUIREMENTS

- .1 Components: Design and size components to withstand dead and live loads caused by positive and negative wind pressure wall. System to be designed to the NBC 2005 for a building importance category of post-disaster. Design shall be engineered by fabricator.
- .2 Movement: Accommodate movement within system without damage to components or deterioration of seals, movement within system; movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; deflection of structural support framing.

- .3 Products: Provide continuity of thermal barrier at building enclosure elements in conjunction with thermal insulating materials.
- .4 Vapour Retarder: Provide continuity of vapour retarder at building enclosure elements in conjunction with vapour retarders specified in Section 07 28 00.
- .5 Air Seal: Provide continuity of air barrier seal at building enclosure elements in conjunction with air seal materials specified in Section 07 28 00.

1.5 SUBMITTALS

- .1 Section 01 33 00: Submission procedures.
- .2 Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- .3 Shop drawings shall be sealed and signed by a Professional Structural Engineer experienced in design of this Work and licensed at the place where the Project is located.
- .4 Product Data: Provide data on metal types, finishes, characteristics.
- .5 Submit two samples x mm in size illustrating metal finish colour.

1.6 QUALITY ASSURANCE

- .1 Perform work in accordance with SMACNA standard details and requirements.

1.7 INSPECTION / TESTING

- .1 Coordinate inspection of roof assembly.
- .2 Testing and inspection of roof installation will be performed by an independent inspection firm appointed and paid for by the City. Testing / inspection will be performed so as to least encumber the performance of the work.
- .3 The City will pay for the cost of inspection on the areas being evaluated. Pay for costs of additional inspections as required due to improper performance of work.
- .4 If, during progress of Work, tests indicate that materials do not meet specified requirements, remove defective work, replace and retest at own expense, as directed by the Contract Administrator.

1.8 QUALIFICATIONS

- .1 Fabricator and Installer: Company specializing in sheet metal roof installations with minimum 5 years documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

- .1 Section 01 61 00: Deliver, store, protect and handle products to site.

- .2 Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- .3 Prevent contact with materials which may cause discolouration or staining.

1.10 COORDINATION

- .1 Coordinate with the work of Section 07 28 00 for continuation of vapour barriers.

Part 2 Products

2.1 ROOF SYSTEM

- .1 Roofing System: Preformed metal panel roofing of standing rib design profile, complete with sub-girt framing and wood blocking anchorage assembly, sheathing on steel decking, insulation, vapour barrier, moisture barrier and prefinished metal flashings and accessory components.

2.2 SHEET MATERIALS

- .1 Sheet Stock: Galvalume steel; 0.76 mm core steel.

2.3 ACCESSORY MATERIALS

- .1 Fasteners: Same material and finish as flashing metal.
- .2 Sheathing: Gypsum sheathing: CSA A82.27M, sheathing grade, 12 mm thick, uncoated face, fire rated.
- .3 Vapour barrier: self adhering membrane type, 0.1 mm thick, polyethylene and rubberized asphalt with strippable treated release paper. Primer and Adhesive per Manufacturers recommendations. Acceptable Products:
 - .1 Ice and water shield by W.R.Grace.
 - .2 Armourguard by IKO.
 - .3 Bakor Eaveguard.
- .4 Insulation: CGSB 51-GP-20M, type 2 expanded polystyrene board as specified in Section 07 21 15.
- .5 Moisture Barrier: As specified in Section 07 21 15.
- .6 Flashings, Closure Pieces, Gutters, Rainwater Conductors, Caps, Trim of same material and where exposed, of same finish as siding; 0.76 mm thick sheet stock, break formed to required profiles.
- .7 Sealants/Gaskets: manufacturer's standard type suitable for use in conjunction with installation of paneling, non-staining, non-corrosive, non-shrinking, and non-sagging; ultra-violet and ozone resistant for exterior applications; colour selected by Contract Administrator for exterior exposed applications.

- .8 Sub-girts: minimum 1.21 mm thick galvanized steel.
- .9 Concealed Z Clip: 0.76 mm aluminized steel type 2, cold formed compatible with roof panels, male and female rib complete with accessory fasteners, size to suit system thickness.
- .10 Special bent plate sections of dimensions, profiles and gauges indicated on drawings.
- .11 Tape sealants: extruded non-skinning resilient preformed butyl compound type.
- .12 Sealant: Polyurethane type, specified in Section 07 92 00 .
- .13 Protective Backing Paint: Bituminous.

2.4 FABRICATION

- .1 Preformed roofing panels: minimum 0.76 mm thick sheet stock, standing seam profile to match Flynn Roofing JSM system, 450 mm wide with stiffening ribs and 50 mm standing seam; interlocking ribs fitted with continuous length sealant or gaskets.
- .2 Form sections true to shape, accurate in size, square, and free from distortion or defects.
- .3 Fabricate cleats of same material as sheet.
- .4 Form pieces in longest practical lengths.
- .5 Hem exposed edges on underside 13 mm; mitre and seam corners.
- .6 Fabricate vertical faces with bottom edge formed outward 6 mm and hemmed to form drip.
- .7 Gutters: Gutters: Rectangular style profile; custom size.

Part 3 Execution

3.1 EXAMINATION

- .1 Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to eaves.
- .2 Verify deck is dry and free of snow or ice.
- .3 Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, reglets are in place, and nailing strips located.
- .4 Verify roofing termination and base flashings are in place, sealed, and secure.

3.2 INSTALLATION

- .1 Install preformed metal panel roofing system complete with insulation, where and as indicated on drawings, and in accordance with manufacturers recommendations and NBC 2005.
- .2 Install gypsum sheathing on steel deck as shown on drawings with self-drilling fasteners.
- .3 Place sheathing with end joints staggered and over firm bearing. Place perpendicular to deck flutes.
- .4 Install vapour barrier over roof sheathing as per manufacturers recommendations, overlap edges 150 mm and apply uniform bead of sealant to vertical joint edges. Prime surface as recommended by vapour barrier supplier.
- .5 Install insulation to thickness indicated on drawings.
- .6 Install insulation to thickness indicated using Z Girts in both directions. Second layer of insulation to be perpendicular to first layer, fasten second layer Z girts to first layer at each intersection.
- .7 Install moisture barrier to top of insulation and Z girts prior to installing standing seam roofing panels.
- .8 Exercise care when cutting materials on site, to ensure cuttings do not remain on finish surfaces.
- .9 Lay sheets with long dimension perpendicular to eaves. Apply pans beginning at eaves.
- .10 Terminate standing seams at ridge and hips by turning down with tapered fold.
- .11 Provide expansion joints where required.
- .12 Use concealed fasteners in all locations except where approved by Contract Administrator.
- .13 Install sealant, gasket, bituthene and flashings associated with roof assemblies where required to arrest direct weather penetration.
- .14 Completed installation is to be free of rattles, noise due to thermal movement and wind whistles.
- .15 Swage end joints c/w caulking bead and concealed clips.
- .16 Install roofing system down fascia of building where indicated.

3.3 FLASHINGS & GUTTERS

- .1 Secure flashings and gutters in place using concealed fasteners. Use exposed fasteners only where permitted.
- .2 Cleat and seam all joints.

- .3 Apply plastic cement compound between metal flashings and felt flashings.
- .4 Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- .5 Seal metal joints watertight.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Coping, parapet, cap, flashings.
- .2 Counter flashings for roof hatches.
- .3 Counter flashings at roof mounted equipment and vent stacks.

1.2 RELATED SECTIONS

- .1 Section 06 10 00 – Rough Carpentry:
- .2 Section 07 52 13-SBS Modified Bituminous Roofing : Roofing system.
- .3 Section 07 46 16 - Preformed Metal Siding.
- .4 Section 07 61 00 - Sheet Metal Roofing.
- .5 Section 07 72 33 - Roof Hatches.
- .6 Section 07 92 00 - Joint Sealants.
- .7 Mechanical systems.
- .8 Electrical Systems.

1.3 REFERENCES

- .1 ASTM A653/A653M - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 CRCA (Canadian Roofing Contractors Association) "Roofing Specification"
- .3 SMACNA - Architectural Sheet Metal Manual.

1.4 SUBMITTALS

- .1 Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- .2 Submit two samples 200x200 mm in size illustrating metal finish colour.

1.5 QUALITY ASSURANCE

- .1 Perform work in accordance with SMACNA standard details and requirements.

1.6 QUALIFICATIONS

- .1 Fabricator and Installer: Company specializing in sheet metal flashing work with Five years documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, protect and handle products to site.
- .2 Stack prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- .3 Prevent contact with materials which may cause discolouration or staining.

1.8 EXISTING CONDITIONS / PROTECTION

- .1 Exercise care when working on or about roof surfaces to avoid damaging or puncturing membrane or flexible flashings.
- .2 Place plywood panels on roof surfaces to work of this section and on access routes. Keep in place until completion of work.

Part 2 Products

2.1 SHEET MATERIALS

- .1 Pre-Coated Galvanized Steel: ASTM A653/A653M, G90 zinc coating; 0.61 mm core steel, shop pre-coated with 8000 Series Defasco coating of colour as selected by Contract Administrator.
- .2 Galvanized Steel: ASTM A653/A653M, G90 zinc coating; 0.61 mm core steel.

2.2 ACCESSORIES

- .1 Fasteners: Same material and finish as flashing metal, with soft neoprene washers.
- .2 Protective Backing Paint: Bituminous.
- .3 Sealant: Polyurethane type, specified in Section 07 90 00.

2.3 FABRICATION

- .1 Form sections true to shape, accurate in size, square, and free from distortion or defects.
- .2 Fabricate cleats of sheet metal, same material as sheet.
- .3 Form pieces in longest possible lengths.
- .4 Hem exposed edges on underside 13 mm; miter and seam corners.
- .5 Form material with flat lock seams.
- .6 Fabricate corners from one piece with minimum 450 mm long legs; seam for rigidity, seal with sealant.
- .7 Fabricate vertical faces with bottom edge formed outward 6 mm and hemmed to form drip.

2.4 FINISH

- .1 Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 0.4 mm.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, , and nailing strips located.
- .2 Verify roofing termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

- .1 Install starter and edge strips, and cleats before starting installation.

3.3 INSTALLATION

- .1 Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.
- .2 Apply plastic cement compound between metal flashings and felt flashings.
- .3 Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- .4 Counter-flash all mechanical and electrical items projecting through membrane roofing
- .5 Install prefinished flashing to all locations indicated on drawings. Install Galvanized flashing to all non exposed locations as indicated on drawings.
- .6 Seal metal joints watertight.
- .7 Seal metal joints watertight.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Prefabricated roof hatches with integral support curbs, operable hardware, and counterflashings.

1.2 RELATED SECTIONS

- .1 Section 07 52 13. - SBS Modified Bituminous Roofing.
- .2 Section 07 62 00 - Sheet Metal Flashing and Trim.
- .3 Section 09 99 00 - Painting .

1.3 SUBMITTALS FOR REVIEW

- .1 Submittals: Provide shop drawings and product data on unit construction, sizes, configuration, jointing methods and locations when applicable, and attachment method.

Part 2 Products

2.1 ROOF HATCH VENT

- .1 Manufacturers:
 - .1 Bilco Roof Hatch
 - .2 Precision Stair Company .
- .2 Unit: 914x914 mm size, single leaf type.
- .3 Integral Steel Curb: 2 mm prime painted steel with 25 mm rigid glass fiber insulation; integral cap flashing to receive roof flashing; extended flange for mounting.
- .4 Flush Steel Cover: 2 mm prime painted steel; 25 mm glass fiber insulation; 0.8 mm steel interior liner; continuous neoprene gasket to provide weatherproof seal.
- .5 Hardware: Cadmium plated finish:
 - .1 Compression spring operator and shock absorbers;
 - .2 Steel manual pull handle for interior and exterior operation;
 - .3 Steel hold open arm with vinyl covered grip handle for easy release,
 - .4 Padlock hasp.
 - .5 Hinges: Heavy duty pintle type.

2.2 FABRICATION

- .1 Fabricate components free of visual distortion or defects. Weld corners and joints.
- .2 Provide for removal of condensation occurring within components or assembly.
- .3 Fit components for weather tight assembly.

Part 3 **execution**

3.1 **INSTALLATION**

- .1 Install in accordance with manufacturer's instructions.
- .2 Coordinate with installation of roofing system and related flashings for weather tight installation.
- .3 Apply bituminous paint on surfaces of units in contact with cementitious materials or dissimilar metals.
- .4 Adjust hinges for smooth operation.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Fireproof firestopping materials and accessories.

1.2 RELATED SECTIONS

- .1 Section 04 20 00 - Unit Masonry
- .2 Section 07 92 00 - Joint Sealants.
- .3 Section 09 21 16 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

1.3 REFERENCES

- .1 ULC-S115-1995, Fire Tests of Firestop Systems, Underwriter's Laboratories of Canada (ULC)
- .2 ULC - Fire Hazard Classifications.
- .3 ULC-S115, Standard Method of Fire Tests of Firestop Systems.

1.4 SYSTEM DESCRIPTION

- .1 Firestopping Materials: ULC to achieve a fire rating as noted on Drawings.
- .2 Firestop all interruptions to fire rated assemblies, materials, and components.
- .3 Fire stopping and smoke seal systems: in accordance with CAN4-S115.

1.5 SUBMITTALS

- .1 Section 01 33 00 Submittal procedures.
- .2 Product Data: Provide data on product characteristics, performance and limitation criteria.
- .3 Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- .4 Provide cut sheets of each fire stop type with test number and products installed.

1.6 QUALIFICATIONS

- .1 Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.7 REGULATORY REQUIREMENTS

- .1 Conform to applicable code for fire resistance ratings and surface burning characteristics.
- .2 All fire stopping products to be ULC listed for each system and penetration type.

- .3 Provide certificate of compliance from authority having jurisdiction indicating approval of materials used.

1.8 ENVIRONMENTAL REQUIREMENTS

- .1 Apply materials within the temperature range as recommended by the manufacturer.
- .2 Maintain this temperature before, during, and for 3 days after installation of materials.

1.9 SEQUENCING

- .1 Sequence work to permit firestopping materials to be installed after adjacent and surround work is complete.

Part 2 Products

2.1 MATERIALS

- .1 Fire stopping and smoke seal systems: asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of CAN4-S115 and not to exceed opening sizes for which they are intended in accordance with CAN4-S115.
- .2 Acceptable Manufactures:
 - .1 Tremco Inc.
 - .2 Johns Manville.
 - .3 Hilti.
 - .4 A/D Fire Protection Systems Inc.

2.2 ACCESSORIES

- .1 Primer: Type recommended by firestopping manufacturer for specific substrate surfaces.
- .2 Dam Material: mineral fibreboard, permanent.
- .3 Installation Accessories: Clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify openings are ready to receive the work of this section.

3.2 PREPARATION

- .1 Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter which may affect bond of firestopping material.
- .2 Install backing and damming materials to arrest liquid material leakage.

3.3 APPLICATION

- .1 Install material at walls or partition openings which contain penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping.
- .2 Install firestop materials in accordance with published ULC systems.
- .3 Apply primer and materials in accordance with manufacturer's instructions.
- .4 Apply firestopping material in sufficient thickness to achieve rating to uniform density and texture.
- .5 Place foamed material in layers to ensure homogenous density, filling cavities and spaces. Place sealant to completely seal junctions with adjacent dissimilar materials.

3.4 CLEANING

- .1 Clean adjacent surfaces of firestopping materials.

3.5 PROTECTION OF FINISHED WORK

- .1 Protect adjacent surfaces from damage by material installation.

END -OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Preparing substrate surfaces.
- .2 Sealant and joint backing.

1.2 RELATED SECTIONS

- .1 Section 07 11 13 - Dampproofing: Sealants required in conjunction with dampproofing.
- .2 Section 07 21 15 - Insulation.
- .3 Section 07 28 00 - Air and Vapour Barriers
- .4 Section 07 84 00 - Firestopping: Sealants required in conjunction with firestopping.
- .5 Section 07 52 13 - SBS Modified Bitumen Roofing: Sealants required in conjunction with roofing.
- .6 Section 07 62 00 - Sheet Metal Flashing and Trim: Sealants required in conjunction with metal flashings.
- .7 Section 08 80 00 - Glazing: Sealants required in conjunction with glazing methods.
- .8 Section 09 21 16 - Gypsum Board Assemblies: Sealants required in conjunction with acoustic treatment.

1.3 REFERENCES

- .1 CAN/CGSB-19.17-M90, One-Component Acrylic Emulsion Base Sealing Compound.
- .2 CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.
- .3 CAN/CGSB-19.22-M89, Mildew Resistant, Sealing Compound for Tubs and Tiles.
- .4 CAN/CGSB-19.21-M87, Sealing and Bedding Compound Acoustical.
- .5 ASTM D1056 - Flexible Cellular Materials - Sponge or Expanded Rubber.

1.4 SUBMITTALS

- .1 Include the following paragraph for submission of physical samples for selection of finish, colour, texture, etc.
- .2 Samples: Submit two samples, 6 x 150 mm in size illustrating sealant colours for selection.

1.5 QUALITY ASSURANCE

- .1 Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

1.6 QUALIFICATIONS

- .1 Applicator: Company specializing in performing the work of this section with minimum Three years documented experience and approved by manufacturer.

1.7 ENVIRONMENTAL REQUIREMENTS

- .1 Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.8 WARRANTY

- .1 Provide five year warranty.
- .2 Warranty: Include coverage for installed sealants and accessories which fail to achieve air tight seal, water tight seal, exhibit loss of adhesion or cohesion, or do not cure.

Part 2 Products

2.1 SEALANTS

- .1 Acrylic Sealant (Type A): CAN/CGSB-19.17, paintable; single component, solvent curing, non-staining, non-bleeding, non-sagging; Tremco latex 100. Colour to be selected by Contract Administrator.
- .2 Acoustic Sealant (Type B): CAN/CGSB-19.21, Acoustic grade, single component, solvent release, non-skinning, non-sagging, synthetic rubber, Tremco Acoustic Sealant Grey colour.
- .3 Polyurethane Sealant (Type C): CAN/CGSB-19.13, single component, chemical curing, non-staining, non-bleeding, Elongation Capability 25 percent, non-sagging ; Tremco Dymonic; PRC RC-1; Sonneborn NP-1; Vulkem 931. Colour as selected by Contract Administrator
- .4 Silicone Sealant (Type D): CAN/CGSB-19.22, single component, fungus resistant, acidic curing, non-sagging, non-staining, non-bleeding; General Electric 'Sanitary 1700; Dow Corning 786. Colours as selected by Contract Administrator.
- .5 Slab on grade control joint sealant (Type E): Sonneborn SL2 or Sikaflex sc/NS.

2.2 ACCESSORIES

- .1 Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- .2 Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

- .3 Joint Backing: ASTM D1056; round, closed cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width.
- .4 Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that substrate surfaces and joint openings are ready to receive work.
- .2 Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

- .1 Remove loose materials and foreign matter which might impair adhesion of sealant.
- .2 Clean and prime joints in accordance with manufacturer's instructions.
- .3 Perform preparation in accordance with manufacturer's instructions.
- .4 Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

- .1 Install sealant in accordance with manufacturer's instructions.
- .2 Measure joint dimensions and size materials to achieve required 2:1 width/depth ratios.
- .3 Install bond breaker where joint backing is not used.
- .4 Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- .5 Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- .6 Tool joints concave.

3.4 CLEANING

- .1 Clean adjacent soiled surfaces.

3.5 PROTECTION OF FINISHED WORK

- .1 Protect finished installation.
- .2 Protect sealants until cured.

3.6 SCHEDULE

- .1 Apply sealant type 'A' to junctures of millwork items and adjacent building components and perimeter of door frames as directed by Contract Administrator.

- .2 Apply sealant type 'B' in two continuous beads around perimeter of plates, at top, bottom and sides of all acoustic rated partitions.
- .3 Apply double bead sealant type 'B' around designated fire separations ie. before setting top and bottom plates, where studs set around other materials, etc
- .4 Apply sealant Type 'C' to exterior condition joints between door frames, window frames, siding components, masonry control joints, etc. and where indicated on drawings.
- .5 Apply sealant Type 'D' to perimeter joints of all sanitary components, vanities, counters, sinks, water closets, shower heads, etc. unless noted otherwise on drawings.
- .6 Apply bond breaker and Type 'E' sealant to control joints in garage floor.

END OF SECTION