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**Document Identification**

**DR**

VOLUME 1

**DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS**

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**END OF SECTION**

## **PART 1 – GENERAL**

### **1.1 GENERAL INSTRUCTIONS**

- .1 Read and be governed by conditions of the *Contract Documents*, including sections of Division 1.

### **1.2 SECTION INCLUDES**

- .1 1.1 General Instructions
- .2 1.2 Section Includes
- .3 1.3 Summary
- .4 2.1 Materials
- .5 3.1 Workmanship
- .6 3.2 General Erection Tolerances

### **1.3 SUMMARY**

- .1 Related Work
  - .1 Section 04051 Masonry Procedures
  - .2 Section 06100 Rough Carpentry
  - .3 Section 07212 Rigid Insulation
  - .4 Section 07213 Batt and Blanket Insulation
  - .5 Section 07531 Ethylene Propylene Diene Monomer (EPDM) Roofing and Waterproofing.
  - .6 Section 07620 Metal Flashing and Trim
  - .7 Section 07900 Joint Sealers
- .2 Shop Drawings
  - .1 Submit shop drawings in accordance with Section 01300 Submittals.
  - .2 Indicate dimensions, profiles, attachment methods, schedule of wall elevations, trim and closure pieces, soffits, fascia, metal furring, and related work.
- .3 Qualifications
  - .1 The work of this section shall be performed by a member in good standing of the Canadian Roofing Contractors Association who shall also:
    - .1 Have a minimum of 5 years' proven satisfactory experience.
    - .2 Have adequate equipment and skilled personnel to complete this work in an efficient and workmanlike manner.
- .4 Guarantee / Warranty
  - .1 This Contractor shall, and hereby does, warrant, and the General Contractor does guarantee, that the metal panels and related closures, fixings, and the like, supplied and installed under this section, shall be free from defects for a period of 1 (one) year. Defective work shall be corrected expeditiously and at no expense to the Owner.

- .2 Furnish said Guarantee/Warranty in writing on a form acceptable to the Consultant, signed and countersigned by the General Contractor and Sub-Contractor.
- .3 Guarantee/Warranty period shall commence from the date of issuance of the Final Certificate of Acceptance of the Building.
- .5 Inspection
  - .1 All roofing and sheet metal work shall be done under the supervision of the Independent Inspection and Testing Company. Work shall not be considered complete until a certificate is issued by the Inspection Company.
  - .2 Notify the Independent Inspection and Testing Company at least 48 hours prior to starting the work.
  - .3 The cost for this inspection shall be part of the Cash Allowance provided under Appendix "A" – Itemized Prices of the Quotation Request.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- .1 Prefinished Metal Cladding and Canopy Soffit
  - .1 Prefinished sheet steel to CSSBI Bulletin B16-94 Prefinished Sheet Steel for Building Construction.
  - .2 Base Metal: galvanized sheet steel to ASTM A446, grade A zinc coat Z275, nominal thickness of 0.76 mm.
  - .3 Profiles:
    - .1 **AD300R**, as manufactured by VicWest Steel, for canopy soffit where indicated.
    - .2 **TRADITION 150**, as manufactured by VicWest Steel, for the exterior wall as indicated.
  - .4 Colours:
    - .1 Finish: to be selected from VicWest Signature
- .2 Metal Flashing and Trim
  - .1 Form all metal flashings, cap flashings, cant flashings, copings, and fascias, to profiles indicated of same prefinished sheet metal as cladding and soffits, colour to match adjacent material unless indicated otherwise.
  - .2 Exposed trim: inside corners, outside corners, cap strip, drip cap, undersill trim, starter strip and window/door trim of same material, colour and finish as cladding, with fastener holes pre-punched.
- .3 .Accessories
  - .1 Isolation coating: alkali resistant bituminous paint.
  - .2 Plastic cement: to CGSB 37-GP-5M89.
  - .3 Underlay for metal flashing: No. 15 perforated asphalt felt to CSA A123.3.

- .4 Cleats: of same material and temper as sheet metal, minimum 50 mm wide. Thickness and colour to be same as the sheet metal being secured.
- .5 Nails: to CSA B111, 16 ga, of sufficient length to adequately secure work in place and have a head of at least 12.7 mm dia. Material shall be compatible with sheet metal being secured.
  - .1 Screws, Bolts, Expansion Shields: to ANSI B18.6.4 of metal compatible with adjacent surfaces. Exposed fastenings shall be made of the same material as the metal surface on which they occur.
  - .2 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .4 Sealant
  - .1 Type 1 (see Section 07900 Joint Sealers) with primer and backer rods as recommended by manufacturer.

### **PART 3- EXECUTION**

#### **3.1 INSTALLATION OF METAL CLADDING AND CANOPY SOFFIT**

- .1 Install cladding in accordance with CGSB 93-GP-5M, and manufacturer's written instructions
- .2 Work shall be done as shown on the drawings to provide a neat, plumb and square installation.
- .3 Install continuous starter strips, inside and outside corners, edgings, soffit, drip, cap, sill and window/door opening flashings as indicated.
- .4 Install outside corners, fillers and closure strips with carefully formed and profiled work.
- .5 Maintain joints in exterior cladding, true to line, tight fitting, hairline joints.
- .6 Attach components in manner not restricting thermal movement. S-lock seams shall be used for joints, shall permit thermal movement and shall be fitted with caulking compound. Space joints on fascias evenly. Dovetail and mitre all corners. Make joints square, plumb, straight and true.
- .7 Caulk junctions with adjoining work with sealant.

#### **3.2 INSTALLATION OF METAL FLASHING AND TRIM**

- .1 Install sheet metal work as detailed. Do not cover felt flashings or roofing materials with sheet metal until inspected and approved.
- .2 Sheet metal work required over all roofing membrane flashings, roof curbs, equipment support curbs, wall flashings, fascia boards, and miscellaneous trim around roof edges, and as indicated.
- .3 Make allowance for thermal movement when forming and installing interlocking sheet metal work to avoid buckling fullness of metal and straining of joints or seams.
- .4 Double-back exposed edges at least 12 mm for appearance and stiffness.
- .5 Provide continuous starter strips to present a true, non-waving leading edge. Anchor back-up in approved manner to provide rigid, secure, permanent installation. Stagger joints with flashing joints.
- .6 Use concealed fastenings except where approved before installation.

- .7 Provide underlay under all sheet metal installed directly over masonry, concrete, or construction grade wood, and elsewhere as necessary to prevent electrolysis. Lay the underlay as sheet metal work is installed. Secure in place and lap joints 100 mm.
- .8 S-lock seams shall be used for joints, shall permit thermal movement, and shall be filled with sealant. Space exposed joints of flashings uniformly. Dovetail and mitre all corners. make joints square, plumb, straight and true.
- .9 Lock end joints and caulk with sealant.

### **3.3 CLEANING OF THE WORK**

- .1 On completion of the Work, remove all bitumen or foreign matter from metal cladding, and wash with soap and hot water, or a suitable washing powder, rinse with cold water and wipe dry with a clean cloth. Leave work in a first class condition to the satisfaction of the Consultant.
- .2 Remove excess materials form the site.

**END OF SECTION**

## **PART 1 – GENERAL**

### **1.1 GENERAL INSTRUCTIONS**

- .1 Preliminary Requirements
  - .1 Comply with the General Conditions, the Supplementary Conditions, and all of Division 1 General Requirements.
  - .2 Requests for substitutions for *Products* specified or indicated will not be considered unless the request is in strict accordance with Section 01630 Product Substitution Procedures.
- .2 Related Sections
  - .1 Section 05123 Structural Steel and Open Web Steel Joists
  - .2 Section 06100 Rough Carpentry
  - .3 Section 07212 Rigid Insulation
  - .4 Section 07465 Preformed Metal Cladding
  - .5 Section 07620 Metal Flashing and Trim
  - .6 Section 07900 Joint Sealers
- .3 Submittals
  - .1 Submit all required submittals in accordance with Section 01330 Submittals.
  - .2 Samples: Submit duplicate 300 mm x 300 mm samples of each sheet metal material specified in order to verify colour match.
  - .3 Shop drawings: indicate arrangement of sheets and joints, types and locations of fasteners and special shapes and relationship of panels to structural frame. Include location and configuration of snow fences and ridge vents.
- .4 Qualifications
  - .1 The work of this section shall be performed by a member in good standing of the Canadian Roofing Contractors Association who shall also:
    - .1 Have a minimum of five (5) years' proven satisfactory experience.
    - .2 Have adequate equipment and skilled personnel to complete the work in an efficient and workmanlike manner.
- .5 Guarantee / Warranty
  - .1 The *Subcontractor* for the work of this section shall, and hereby does, warrant, and the *Contractor* does guarantee, that the sheet metal panels, related closures, fixings, and the like, *Provided* as part of the work of this section shall be free from defects for a period of two (2) years from the date of *Substantial Performance of the Work*.
  - .2 Furnish said guarantee/warranty in writing in a form acceptable to the *Consultant* and the *Owner*, signed and counter-signed by the *Contractor* and the *Subcontractor*.
- .6 Inspection

- .1 All roofing and sheet metal work shall be done under the supervision of the Independent Inspection and Testing Company. The *Work* shall not be considered complete until a certificate is issued by the Independent Inspection and Testing Company.
- .2 Notify the Independent Inspection and Testing Company at least 48 hours prior to commencement of roofing work.
- .3 The cost for this inspection shall be paid for as part of the cash allowance for Independent Inspection and Testing in accordance with Section 01210 Allowances.

## 1.2 PRODUCTS

- .1 Prefinished sheet metal
  - .1 Prefinished sheet steel to CSSBI Bulletin B16-94 Prefinished Sheet Steel for Building Construction.
  - .2 Base metal: continuous hot-dipped galvanized sheet steel conforming to the requirements of ASTM A-653M, nominal thickness of 0.76 mm.
  - .3 Profile: Tradition 150 in 500 mm coverage, full-length of roof slope without transverse seams, as manufactured by VicWest Steel.
  - .4 Finish: to be selected from VicWest Signature - SMP Coated Metal Line
- .2 Accessories
  - .1 Ice and water shield as recommended by the sheet metal manufacturer.
  - .2 Sealant: Type 1 in accordance with Section 07900 Joint Sealers with primer and backer rods as recommended by the sheet metal manufacturer.
  - .3 Fasteners: concealed type.
  - .4 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
  - .5 Ridge vents: as recommended by roofing manufacturer in locations indicated.
  - .6 Snow guards/fences: Blizzard II (S-5! DualGard) as manufactured by Rocky Mountain Snow Guards Inc. System to be engineered to integrate with standing seam roof system. Colour to match colour of standing seam roof system, or approved equivalent.
- .3 Fabrication
  - .1 Hem exposed edges on underside 12 mm, mitre and seal.
  - .2 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

## 1.3 EXECUTION

- .1 Installation
  - .1 Install in accordance with manufacturer's recommendations.
  - .2 Work shall be done to provide a neat, plumb, and square installation.
  - .3 Ice and water shield to be applied over entire extend of low roof areas, installed shingle style.
  - .4 Apply sheet metal roofing beginning at eaves.

- .5 Form side laps with stitch fastening using a continuous bead of sealant or butyl tape.
- .6 Flash roof penetrations with material matching roof panels and make watertight using a continuous bead of sealant or butyl tape.
- .7 Form valleys of sheets not exceeding 3000 mm in length. Lap joints 150 mm in direction of water flow. Extend valley sheet a minimum of 150 mm under roofing sheets. At valley line, double-fold valley and roofing sheets and make watertight using a continuous bead of sealant or butyl tape.
- .8 Panel ends to be folded and hooked into metal flashing in accordance with manufacturer's standard details and recommendations.
- .9 Attach components in a manner not restricting thermal movement.
- .10 No face fasteners are to be used at ridges, valleys, hips, eaves, or valley starter strips.
- .11 Additional blocking is required between joists or trusses in locations where snow fences are to be installed.
- .12 Fix purpose made closures to bottom edge of sheet metal roof.
- .2 Cleaning of the work
  - .1 On completion of the work, remove all bitumen or foreign matter from metal roofing, and wash with soap and hot water, or a suitable washing powder, rinse with cold water and wipe dry with a clean cloth. Leave work in a first class condition to the satisfaction of the *Consultant*.
  - .2 Remove excess materials from the *Place of the Work*.

**END OF SECTION**

## **PART 1 – GENERAL**

### **1.1 GENERAL INSTRUCTIONS**

- .1 Read and be governed by conditions of the *Contract Documents*, including sections of Division 1.

### **1.2 SECTION INCLUDES**

#### **PART 1 – GENERAL**

- 1.1 GENERAL INSTRUCTIONS
- 1.2 SECTION INCLUDES
- 1.3 SUMMARY
- 1.4 SUBMITTALS
- 1.5 CLOSEOUT SUBMITTALS
- 1.6 QUALITY ASSURANCE
- 1.7 DELIVERY, STORAGE, AND HANDLING
- 1.8 FIELD CONDITIONS
- 1.9 WARRANTY

#### **PART 2 - PRODUCTS**

- 2.1 MANUFACTURER
- 2.2 PERFORMANCE/DESIGN REQUIREMENTS
- 2.3 MATERIALS
- 2.4 ENTRANCE FRAMING
- 2.5 ALUMINUM ENTRANCE DOORS - EXTERIOR
- 2.6 ALUMINUM ENTRANCE DOORS - INTERIOR
- 2.7 ALUMINUM CURTAIN WALL
- 2.8 FINISHES
- 2.9 FABRICATION

#### **PART 3 - EXECUTION**

- 3.1 INSTALLATION
- 3.2 AIR VAPOUR BARRIER CLOSURES
- 3.3 GLAZING
- 3.4 SEALANTS
- 3.5 HARDWARE
- 3.6 ADJUSTING AND CLEANING

### **1.3 SUMMARY**

- .1 Section includes:
- .1 Aluminum entrances.
  - .2 Aluminum windows.

## 1.4 SUBMITTALS

- .1 Submit required submittals in accordance with Section 01 33 00.
- .2 *Product* data sheets:
  - .1 Submit manufacturer's *Product* data sheets for Products proposed for use in the work of this section.
- .3 Shop drawings:
  - .1 Further to requirements of Section 01 33 00, indicate system dimensions, framed opening requirements and tolerances, adjacent construction, anticipated deflection under load, affected related work, weep drainage network, expansion and contraction joint location and details, field welding, coordination with hardware and electrical requirements.
  - .2 Identify and describe material types being supplied, wall thicknesses of extrusions, and shapes including connections and grades, dimensions and tolerances (minimum and maximum), attachments, reinforcing, anchorage and locations of fastenings, and provisions for thermal and structural movement between components of this section and adjacent materials.
  - .3 Include description of materials, metal finishing specifications, and other pertinent information.
  - .4 Design loads, typical reactions and support movement allowances, both vertical and horizontal, shall be placed on the shop drawings.
  - .5 Shop drawings shall clearly indicate the specification of materials and, where applicable, indicate installation methods and coordination with other sections.
  - .6 Submit framing member structural and physical characteristics, calculations, dimensional limitations, special installation requirements.
- .4 Samples:
  - .1 Submit samples of frame, sill and mullion sections, sill flashing and accessories, fasteners for connection of frame to opening, glazing tape, glass retainers, glazing gaskets, screening and frame, spandrel panels and each finish material and any other material, as requested.
  - .2 Samples of colour and finish prepared as specified on respective metal components for both extrusion and sheet.
  - .3 Identify samples as to treatment, thickness, alloy, framing composition, colour, manufacture, performance standard and portion of the work to which they apply.
  - .4 Fabrication shall not proceed without written acceptance of samples from the *Consultant*.
- .5 Test reports:
  - .1 Submit valid laboratory test reports, prepared by an independent laboratory, verifying that proposed system has been tested by an independent laboratory and achieved performance values that meet the specified performance criteria.

## 1.5 CLOSEOUT SUBMITTALS

- .1 Operation and maintenance data:

- .1 Submit manufacturer's operation and maintenance instructions for incorporation into the operation and maintenance manuals in accordance with Section 01 77 00.

## **1.6 QUALITY ASSURANCE**

- .1 Qualifications:

- .1 Installers / applicators / erectors:

- .1 Execute work of this section only by company who has adequate plant, equipment, and skilled workers to perform it expeditiously, and is known to have been responsible for satisfactory installations similar to that specified during a period of at least the immediate past 5 years.
    - .2 *Provide* at least one trade specialist who shall be thoroughly trained and experienced in skills required, be completely familiar with referenced standards and requirements of this work, and personally direct installation performed under this section.
      - .1 Foreperson experience: Minimum 10 years' experience as glazing mechanic.
      - .2 Typical glazing mechanic experience: Minimum 3 years' experience as glazers.
    - .3 Welding: Perform welding of structural components only by fabricators certified by Canadian Welding Bureau to CSA Welding qualification codes; CSA W47.1-09(2014) for welding of steel, and CSA W47.2-12 for welding of aluminum.

## **1.7 DELIVERY, STORAGE, AND HANDLING**

- .1 Store parts in a dry place and permit natural ventilation over their finished surfaces.
- .2 Store materials in locations protected from damage of other trades.
- .3 Under conditions of high humidity or cold temperatures, supply heating or forced air ventilation to prevent accumulation of surface moisture.
- .4 Mark components to show location on building and on the Drawings.
- .5 Protect finishes with strippable coating that will not mar, nor deface finish on removal, or a similar method designed to afford an equivalent amount of protection. Leave protected coating intact until damage risk is past or immediately prior to final cleaning.
- .6 Stacking should be done to prevent bending pressure or abrasion of finished surfaces.
- .7 Brace and protect frame units to prevent distortion and damage in shipment and handling.
- .8 *Provide* methods for lifting or hoisting units into place without causing damage.

## **1.8 FIELD CONDITIONS**

- .1 Comply with requirements of *Product* manufacturers.

## **1.9 WARRANTY**

- .1 This section shall assume responsibility for warranties of glass and glazing included in the work of this section, in accordance with Section 08 80 00.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURER**

- .1 *Work* of this section shall be provided by one of the following:
  - .1 Alumicor Limited.
  - .2 Kawneer Company Ltd.
  - .3 Or equivalent (substitutions in accordance with Section 01 25 00).

### **2.2 PERFORMANCE/DESIGN REQUIREMENTS**

- .1 Air Leakage; except entrance doors: Air leakage through the work shall not exceed 0.3 L/s/m<sup>2</sup> (0.06 cfm/ft<sup>2</sup>) of glazing area when tested in accordance with ASTM E283- 04(2012) at test pressure of 300 Pa (6.24 psf).
- .2 Water Penetration (other than entrance doors): No water penetration shall occur when the work is tested in accordance with ASTM E331-00(2009), amended to prohibit water from passing through interior glazing seals or frame joints, at a test pressure of 300 Pa (6.24 psf).
- .3 Fabricate mullions to ensure under specified loads a maximum deflection of 1/175 of mullion span or 19 mm (3/4"), whichever is less.
- .4 Design and size components to withstand dead and live loads caused by pressure and suction of wind, acting normal to plane of system as calculated in accordance with code.
- .5 Design and size components to withstand seismic loads and sway displacement as calculated in accordance with code.
- .6 *Provide* system to accommodate, without damage to components or deterioration of seals:
  - .1 Movement within system,
  - .2 Movement between system and perimeter framing components,
  - .3 Dynamic loading and release of loads,
  - .4 Deflection of structural support framing,
- .7 Maintain continuous air barrier throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound, in accordance with the *Contract Documents*.
- .8 Position thermal insulation to exterior of air barrier, in accordance with the *Contract Documents*.
- .9 Ensure no vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system occur.
- .10 *Provide* anchors sufficiently rigid to resist wind and snow loads caused by aluminum shades and brackets, without damage to wall system.

### **2.3 MATERIALS**

- .1 Aluminum extrusions: Aluminum Association alloy AA6063-T5 or T6 temper for framing.
- .2 Sheet aluminum: aluminum sheet, 0.92 mm (0.04") minimum thickness.
  - .1 Aluminum alloy:

- .1 AA3003-H14 Painting Quality.
- .2 AA5005H14 Anodizing Quality.
- .3 Concealed sheet metal air barriers: 1 mm (0.04") (22 gauge) Z275 galvanized steel sheet.
- .4 Fasteners: aluminum or Type 304 stainless steel, finished to match adjacent material.
- .5 Isolation coating: alkali resistant bituminous paint or epoxy solution.
- .6 Glazing gaskets: fully resilient, shim type butyl glazing tape or EPDM glazing gasket.
- .7 Glass and other glazing materials: Refer to Section 08 80 00.
- .8 Silicone Sealant: One component, chemical curing; capable of water immersion without loss of properties: cured Shore A Durometer hardness of 15 to 25 to ASTM D2240- 05 (2010), colour as selected by the *Consultant*, where exposed, to ASTM C920-11.
- .9 Sheet metal work air barrier sealant: One component elastomeric chemical curing, to ASTM C920-11.
- .10 Air barrier membrane:
  - .1 Self-Adhesive membrane: Composite preformed modified membrane system consisting of SBS modified asphalt for low temperature flexibility and polyethylene scrim reinforcing.  
Acceptable Products:
    - .1 Bakor 'Blueskin SA' Self-Adhesive Grade Air Barrier Membrane.
    - .2 Soprema 'Soprasedal Stick 1100'.
    - .3 W.R. Meadows 'Air Shield'.
    - .4 .4 Or equivalent.
  - .2 Primer: as recommended by manufacturer.
  - .3 Membrane Properties:
    - .1 Thickness: 1.0 mm (40 mils).
    - .2 Application temperature: minimum +5°C.
    - .3 Service temperature: -40°C to +70°C.
    - .4 Elongation: 200% minimum in accordance with ASTM D412-06a (2013)- modified.
    - .5 Low temperature flexibility: to -30°C to CGSB 37-GP-56M-1985.
    - .6 Air leakage: 0.005 L/m2.s under a pressure differential of 75 Pa (0.01 PSI) in accordance with ASTM E283-04(2012).

## 2.4 ENTRANCE FRAMING

- .1 Exterior aluminum framing: 50.8 mm x 152.4 mm (2" x 6") frames and 152.4 mm x 152.4 mm (6" x 6") jambs, thermally broken extruded aluminum assembly with flush sight lines.
  - .1 Acceptable *Product*: Kawneer Tri Fab 601UT or equivalent.
- .2 Interior aluminum framing: 45 mm x 114 mm (1-3/4" x 4-1/2") frames and 114 mm x 114 mm (4-1/2" x 4-1/2") jambs, non-thermally broken extruded aluminum assembly with flush sight lines.

- .1 Acceptable *Product*: Kawneer Tri Fab 450 or equivalent.
- .3 All section shall be designed for shear block joinery.

## 2.5 ALUMINUM ENTRANCE DOORS - EXTERIOR

- .1 Entrance glazing system shall be designed according to Section 08 41 00 requirements and the following:
  - .1 Doors:
    - .1 Acceptable *Product*: Kawneer '350 Medium Stile' or equivalent.
  - .2 Fasteners connecting and fixing the frame members shall be concealed.
  - .3 Reinforce mechanically-joined corners of doors by welding, spigotting, welding and spigotting or by one piece cast aluminum angle to produce sturdy door unit.
  - .4 Door stiles shall be weathered with metal backed polypropylene pile weather- stripping.  
*Provide* weather-stripping sweeps at door bottoms.
  - .5 Door hardware: Norton 1605 closer, 1 MS lock and 2 thumb latches (locations as scheduled or indicated), exterior threshold 115 mm (4.5"), 1 pair butt hinges, weather stripping and Classic Hardware CO-9 with stainless steel US32 polished finish, flash cap across the top of door.
    - .1 *Provide* Unican locks where indicated or scheduled in the *Contract Documents*.
    - .2 Barrier free door operators: in accordance with Section 08 71 13.
  - .6 Weathering on offset pivot or butt hung doors (single or pairs) shall be Kawneer SEALAIR elastomeric weathering of tubular shape, with a semi-rigid polymeric backing, or equivalent.
  - .7 Door bottom rail weathering (where required) shall be an extruded elastomeric blade sweep strip applied with concealed fasteners.
  - .8 Glass: Refer to Section 08 80 00.

## 2.6 ALUMINUM ENTRANCE DOORS - INTERIOR

- .1 Interior entrance and interior glazing system shall be designed according to Section 08 41 00 requirements and the following:
  - .1 Doors:
    - .1 Acceptable *Product*: Kawneer '350 Medium Stile' or equivalent.
  - .2 Fasteners connecting and fixing the frame members shall be concealed.
  - .3 Reinforce mechanically-joined corners of doors by welding, spigotting, welding and spigotting or by one piece cast aluminum angle to produce sturdy door unit.
  - .4 Door stiles shall be weathered with metal backed polypropylene pile weather- stripping.  
*Provide* weather-stripping sweeps at door bottoms.
  - .5 Door hardware: Norton 1605 closer, 1 MS lock and 1 thumb latch (locations as scheduled or indicated), 1 pair butt hinges, and Classic Hardware CO-9 with stainless steel US32 polished finish, flash cap across the top of door.
    - .1 Barrier free door operators: in accordance with Section 08 71 13.

- .6 Weathering on offset pivot or butt hung doors (single or pairs) shall be Kawneer SEALAIR elastomeric weathering of tubular shape, with a semi-rigid polymeric backing, or equivalent.
- .7 Door bottom rail weathering (where required) shall be an extruded elastomeric blade sweep strip applied with concealed fasteners.
- .8 Glass: Refer to Section 08 80 00.

## 2.7 ALUMINUM CURTAIN WALL

- .1 Glass Design:
  - .1 Glass shall be designed according to CAN/CGSB 12.20-M89 and Section 08 80 00.
  - .2 Glass subjected to guard loads shall be designed with an alternative resistance path in the event of failure of one lite or ply of glass.
  - .3 Insulating glass units in accordance with Section 08 80 00.
- .2 Curtain wall shall be designed according to Section 08 41 00 requirements and the following:
  - .1 Acceptable Products:
    - .1 Alumicor 'VersaWall 2200 Series'.
    - .2 Kawneer '1620', with vertical SSG (50.8mm x 152.4mm)
    - .3 Or equivalent.
  - .2 Thermally broken sections.
  - .3 Mechanically fasten horizontal and vertical edges of infill materials and glass units with mechanically fastened continuous pressure plates complete with caps.
  - .4 Glazing cavity shall be compartmentalized at every floor level and every 6000 mm horizontally to prevent the movement of air in accordance with standard rain screen design.
  - .5 Fasteners: concealed.
  - .6 Cap extensions shall be extruded to profiles indicated and scheduled. Break- formed cap extensions will not be accepted.

## 2.8 FINISHES

- .1 Exposed aluminum surfaces; anodized to AAMA 611-98:
  - .1 Clear anodized to AA Designation AA-M12C22A41 at exterior, AA-M12C22A31 at interior.

## 2.9 FABRICATION

- .1 Sills: extruded aluminum, finished to match window frames, 15 mm (5/8") minimum projection beyond wall surface. *Provide* preformed end caps wherever sill terminates. Butt joint sill and *Provide* preformed splice connector and sealant to prevent water penetration. Locate splice connectors (joint covers) at center line of mullions when required. Trim and detail corners neatly.
- .2 Make allowances for deflection of structure. Ensure that structural loads are not transmitted to aluminum work.
- .3 *Provide* structural steel reinforcement for strength, stiffness and connections.

- .4 Fit intersecting members to flush hairline weathertight joints and mechanically fasten together, except where indicated otherwise.
- .5 Conceal fastenings from view. Exposed fastenings where indicated.
- .6 Form cut-outs, recesses, mortising or milling for finishing hardware to templates supplied. Reinforce with aluminum or galvanized steel plates.
- .7 Field apply isolation coating to aluminum in contact with dissimilar metals and/or cementitious materials.
- .8 Fabricated assemblies shall make required clearances other assemblies and for deflection of structure.

### **PART 3 - EXECUTION**

#### **3.1 INSTALLATION**

- .1 Install work of this section plumb, square, level, free from warp, twist and superimposed loads.
- .2 Secure work in required position. Do not restrict thermal movement.
- .3 Install hardware in accordance with templates.
- .4 Adjust operable parts for correct function.
- .5 Isolate from cementitious materials.

#### **3.2 AIR VAPOUR BARRIER CLOSURES**

- .1 It is the responsibility of this section to give complete cooperation in providing and maintaining the continuity of air/vapour seal to adjacent materials to which the windows and frames abut. Fit flexible seals, tapes, sealants and gaskets at locations required to achieve air/vapour/water resistant and weathertight junctions. Ensure continuity of seal at end joints between lengths of material by overlapping and cementing. Caulk junctions of system components to themselves and other work with sealant to maintain effective vapour, air and water barrier and fix in place with an aluminum flat to the air/vapour seal line at the adjacent material and to the glazing rebate.
- .2 Where deflection of structure will cause dynamic joint movement between aluminum work and dissimilar materials, install flexible seals of sufficient width to allow formation of bellows to take up any torsional and shear stresses.

#### **3.3 GLAZING**

- .1 Glaze aluminum framed windows and doors at exterior using insulating glazing units in accordance with Section 08 80 00.
- .2 Glaze interior windows and doors in accordance using glass types given in the glazing schedule and in accordance with section 08 80 00.

#### **3.4 SEALANTS**

- .1 Seal between frame members, sills and adjacent construction as a part of the work of this section and in accordance with Section 07 92 00.

#### **3.5 HARDWARE**

- .1 Install in accordance with manufacturer's installation instructions.

- .2 Accurately locate and adjust hardware to meet manufacturer's instructions. Use special tools and jigs as recommended.
- .3 Set, fit and adjust hardware according to manufacturer's directions, at heights as confirmed by the *Consultant*. Hardware shall operate freely. Protect installed hardware from damage and paint spotting.
- .4 At operable windows, provide hook bolt locking mechanisms (2 per window) and crank mechanism complete with T-Crank window handle (as manufactured by CR Laurence) H38xx (last two digits dependant on colour selection). Handle must not project beyond interior face of window framing so that window shades can be adjusted without interference of handle. Finish of locking and crank mechanisms shall match finish of framing.
- .5 Powered hardware:
  - .1 Power wiring will be supplied and installed by electrical work installer including conduit, boxes and other electrical appurtenances, including connections and terminations. Be responsible for ensuring that all wiring work is done in accordance with the Suppliers wiring diagrams and directions.
  - .2 Arrange for testing and commissioning of system by the distributor of the system. Submit a copy of reports to the *Consultant*.

### 3.6 ADJUSTING AND CLEANING

- .1 Cleaning on completion of installation:
  - .1 Remove deposits which affect appearance or operation of units.
  - .2 Remove protective materials.
  - .3 Clean interior and exterior surfaces by washing with clear water; or with water, and soap or detergent; followed by a clear water rinse.
  - .4 Clean and restore stained metal surfaces in accordance with manufacturer's recommendations. Replace if cleaning is impossible.
  - .5 Final cleaning is specified in Section 01 77 00.

**END OF SECTION**