1. GENERAL

1. GENERAL REQUIREMENTS

    1. Division One, General Requirements, is part of this Section and shall apply as if repeated here.

QUALIFICATIONS

    2. Manufacturers approved for the work of this Section are:

        1. Kawneer Company Limited, Canada
        2. Alumicor

    3. Only those manufacturers listed above shall be used, unless approved by the Architect in writing 7 days prior to tender closing. All proposed equivalent products shall comply fully with the product performance requirements / finishes / all options specified and detailed on the drawings.

    4. It is the responsibility of the approved manufacturers to meet or exceed and submit OBC SB-10 Energy Efficiency Compatibility Results.

        Note: The above mentioned submittal is to incorporate the specified sealed glazing unit and each opening component as a whole before the shop dwg.'s are accepted or before any shop drawings are reviewed.

2. SHOP DRAWINGS

    1. Submit shop drawings in electronic PDF format in accordance with GC 3.10 of CCDC Document 2- 2020.

    2. Submit shop drawings for the fabrication and installation of associated components of the work. Indicate anchors, joint system, expansion provisions, hardware, and other components not included in manufacturer's standard data. Include glazing details (where required).

    3. Before shop drawings and fabrication are started, take critical measurements at the site to facilitate installation and fitting of work.

    4. Note that shop drawings for translucent glazing units to be part of this section.

    5. Submit with shop drawings certification that window design and construction will meet the specified requirements. Certification shall be in the form of test reports on similar units performed by an independent testing laboratory and shall meet approval of Architect before fabrication commences.

    6. Shop drawings that are submitted are to be in the units of the tendered

drawings with critical on center mullion dimensions (dimension string from datum level to top of opening noting center of mullions) noted along with all other regular shop drawing dimensions, no exceptions. Both units (metric and imperial) are allowed. Openings are to be identified with the corresponding tags on the tendered drawings.

3. SUBMITTALS

1. Submit samples of window, glazing, fasteners, caulking and finishes / colours for Architect's approval before fabrication.

2. Furnish templates, diagrams, and other data to fabricators and installers of related work, as needed for coordination installation.

3. Coordinate with Division 16, Section 08700 Finish Hardware and security subcontractor for any electrical provisions required.

4. WARRANTY

1. The work and materials of this Section shall be under Warranty in accordance with GC 12.3 of CCDC Document 2 - 2020 but for a period of five (5) years from the date of Architect's Certificate of Substantial Completion. Hermetically sealed glazing units shall be guaranteed for a period of ten (10) years.

2. Warranty shall include Warranty against excessive colour changes or surface deterioration of aluminum finishes; complete weather tightness of the curtain wall and aluminum panel system against unreasonable intensity and frequency, or both, of sound by the curtain wall and aluminum panel system installation or its anchorage system or loosening or deforming of any members of the installation.

5. PROTECTION

1. Mark each light with a large cross to indicate presence of glass (colour that stands out to the visible eye). Use material that will leave no residue after removal.

2. Replace under the work of this section defective, damaged or broken glass due to fault setting, handling or storage.

6. OPERATION AND MAINTENANCE DATA

1. Upon completion of installation, supply standard parts service kit and service manual. Arrange with, and demonstrate to building maintenance staff window operation, sash removal, cleaning, re-glazing, and general maintenance procedures.

7. DESIGN

1. Conform to latest issue of CAN/CSA-A440 performance standards Air Leakage-Type A3, Water Leakage Type B7, Wind Resistance-Type C5 and a Condensation Resistance Factor - I factor 67.

2. Design for wind and snow loads as set out by the Ontario Building Code, 2012, as currently amended, for the building location. Copies of any and all structural calculations made in connection with the supplementary design and/or detailing of the work of this section shall be promptly furnished to the Architect if requested.

3. Supply all connections, brackets, angles and fasteners to tie curtain wall to main structure, floors, columns and beams.

4. Supply all covers, copings, special flashings, filler pieces, termination pieces, caps closures, expansion joint covers and metal bellows, as required and as indicated on drawings including interior side where indicated on drawing.

8. STANDARDS

1. Kawneer 451UT (Drain System) Thermally Broken Window System - 4 ½" (114 mm) deep frames (manufacturer to approve in writing with tender submission prior to start of construction in regard to loading on the system(s)) with 2" (50mm) tubular mullion with Model # 451T-037 thermal flashing overlapped with 526-008 joint cover as indicated on drawings and/or as recommended otherwise by manufacturer.

   Provide Storefront GLASSvent UT (Ultra Thermal) top pivoting awning / side pivoting casement projecting-out window operation with Crank Operator (Pivot Shoe Roto-Operator) with scissor arm assembly and complete with removable insect screens. Operator to work from interior without removing insect screen. Install lock suitable for operation and that will not interfere with operation and insect screen.

   NOTE:
   Maximum operable opening not to exceed 4" (100mm) on any floor level from above ground (Main, Level 1) floor and up.

   Kawneer 5525 Thermally Broken Window System is an acceptable alternative product.

2. Kawneer OptiQ AA5450 Series pass-through window, sliding configuration.

2. PRODUCTS

1. MATERIALS

1. Aluminum: Extruded aluminum alloy members 6063 T5 alloy, minimum 1.6 mm (0.62") thick. Sheet which is not to be exposed shall be Utility Grade.

2. Aluminum Flashing: Supply 0.125" (3.2 mm) thick aluminum to profiles as indicated on drawings.

3. Aluminum Sills: Model #451T-037 aluminum sills shall be complete with Kawneer typical sill anchors, joint covers, match Kawneer 526-008, chairs, anchoring devices and jamb drip deflectors. Extruded sills to have profile with minimum 1/8" (3 mm) thickness and depth of sill as required. Sills shall be in longest possible lengths, joints only at mullions.

   NOTE: Aluminum sills to be provided at bottom of all windows and curtain wall locations as detailed.

4. Vision Glass: as per 08800 Glass and Glazing Section.

5. Operating Vents / Sashes: Black anodized colour, hinged awning / casement limited opening to max. 4" (100mm). 1 pair heavy duty Anderburg or Senator Friction Arms with polished US-4 cam handle and keeper for 500mm wide and less and 2 for all windows greater than 500mm wide.

6. Insect Screens: Size to match operable window vent as per manufacturer, glass fibre mesh in clear anodized aluminum frame with extruded elastomer removable splines.

7. Smart Glass Inner Lite: as per 08800 Glass and Glazing Section.

8. Spandrel Glass Panels: as per 08800 Glass and Glazing Section.

9. Glazing Tape: Tremco 440 tape with built in shim as recommended by manufacturer, colour selected by Architect.

10. Spacer Shim: oil resistant rubber of plastic acceptable to glass manufacturer, channel shaped and each approximately 4" (100 mm) long.

11. Thermal Break: virgin polyvinyl chloride.

12. Isolating Coating: Black alkali resistant bitumastic enamel.

13. Sealant Bond Breaker: Open cell foam backer rod sized to suit.

14. Silicone Sealant: Dow Corning #795 or as per manufacturer's recommendations exceeding CAN2-19.13-M87 Class 40 requirements. Min 2 colours as selected by Architect.

15. Sealant at Perimeter Masonry Openings: 3 part Tremco Dymeric 240 sealant in accordance with Caulking - Section 07900 (Type A sealant). Minimum 2 colours as selected by Architect.

16. Fasteners, Screws and Bolts: Stainless steel 300 Series or stainless steel 400 Series cadmium plated of sufficient size and quality to perform their

intended function.

17. All other materials shall conform to NAAMM Standard SW-1-68T.

2. FABRICATION

1. General

1. Construct aluminum assemblies of extruded section to size and profile shown on drawings.

2. Build units, square, true, accurate to size, free from distortions, waves, twists, buckles or other defects detrimental to performance or appearance.

3. Units too large for handling or shipping shall be prefabricated in factory, disassembled and marked for shipping and field assembly.

4. Use concealed fastenings. No exposed screws shall show in the finished work where finished product is exposed to view, unless approved by the Architect. Such screws shall be countersunk and finished to match surfaces in which they occur.

5. Fabricate windows using two separate frames joined by means of a thermal break, and as follows:

1. Cope and butt all joints in main frame, neatly in weather tight manner and secure by means of screws anchored into integral screw ports.

2. Deburr and make smooth all sharp milled edges and corners of frames.

3. Provide sill members with minimum 7 degree slope. Aluminum sills shall be complete with required anchors, joint covers, and drip deflectors. Extruded sill to profile shown in longest possible lengths. Provide upturn drip - deflectors at ends of sill.

4. Provide sill weep system which will facilitate drainage of water accumulating in sill area while preventing passage of air, dirt and insects to interior.

5. Fabricate and anchor both inner and outer frames using specific screw fasteners without violating the thermal break. Exposed fasteners or pop rivets are not acceptable.

6. Fabricate entire window in a manner that will allow easy replacement of any defective, damaged or worn components, hardware or weather stripping.

7. Fabricate windows so that the aluminum head and sill members are continuous for the entire length of the frame and extend over and beneath the jamb members.

2. Finish

1. All to be PPG Duranar XL (UC70178XL) Champagne Metallic with the exception of the operating vents which are to be black anodized finish (Kawneer #29 finish) on the exterior only and PPG Duranar XL (UC70178XL) Champagne Metallic.

3. EXECUTION

1. INSTALLATION

1. Install work in accordance with manufacturer's recommendations and with standards specified herein.

2. Work shall include all fixings, clips stiffeners, trim pieces, sills condensation gutter, etc., as required for a complete installation.

3. Install windows plumb, level and true relative to building structure. Do not exceed 1/8" (3 mm) in 10'-0" (3050 mm) variation from plumb and level.

4. Provide all required expansion joints.

5. Isolation: isolate all aluminum coming in contact with other metals, masonry or concrete with heavy shop coating of black alkali resistant bitumastic paint.

6. All fixings shall be concealed.

7. Wood shall not be used for shimming or blocking.

8. Fill voids in aluminum extrusions and between masonry surfaces at all perimeters with foam spray applied insulation as specified in Section 07215 to prevent movement or infiltration of air.

2. CAULKING

1. Work shall include caulking at all joints between aluminum frame members. All perimeter window caulking to surrounding finishes to conform to Section 07900 and be installed by this Section 08520.

2. Caulk in accordance with materials and procedures as Section 07900.

3. GLAZING

1. Set glazing tape against permanent stops, allow 4 mm for heal bead, set horizontal strips first using fill width pieces of tape, then set vertical pieces. Butt tape at corners, do not run tape or run continuous at corners.

2. Set glass on setting blocks, number as recommended by glass manufacturer. Set glass with draw lines horizontal.

3. Apply heal bead on interior using sealant. Place spacer shims, set glazing tape against glass and install stops.

4. Apply cap bead to fill void on exterior tool sealant with a slight bevel, sloped away from the glass to create a water shed.

5. Mark each light with a large white cross to indicate presence of glass. Use flour and water paste for markings.

6. Replace under the work of this section defective, damaged or broken glass due to faulty setting, handling or storage.

7. Neoprene bulb type glazing in accordance with manufacturer's instructions.

4. ADJUST AND CLEAN

1. Clean surfaces promptly after installation, exercising care to avoid damage of the protective coating (if any).

2. Advise the Contractor of protective treatment and other precautions required through the remainder of the construction period, to ensure that windows will be without damage or deterioration (other than normal weathering) at the time of acceptance.

3. Aluminum shall be isolated from concrete, mortar, plaster and dissimilar metal with bituminous paint. Windows shall be protected from other building materials during and after installation until acceptance by the Contractor. Thereafter, it shall be the responsibility of the Contractor to maintain protection and provide final cleaning.

END OF SECTION