

# **Window and Curtain Wall Replacement Champlain College, West Quad Building Trent University**

## **Architectural Specifications**

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## **DIVISION 8 - GENERAL WINDOW SPECIFICATION**

### **PART 1 - GENERAL**

The work includes the removal and replacement of curtain wall, window and door system as specified in Divisions 8A, 8B, 8C and 8D, including all related work required for a complete system.

### **PART 2 - PRODUCTS**

The products provided shall meet the requirements of the Divisions noted above. Furthermore, all window products supplied shall be from one manufacturer and they shall be compatible with the various aluminum framing systems and components used from that manufacturer.

### **PART 3 – EXECUTION**

Complete the work in strict accordance with Division 8A, 8B, 8C and 8D, as well as all written directions from the manufacturer.

# **DIVISION 8A – HIGH PERFORMANCE STICK BUILT ALUMINUM CURTAIN WALL SYSTEM**

## **PART 1 GENERAL**

### **1.1 SECTION INCLUDES**

1. Provide stick built, capped, pre-finished curtain wall system in the locations indicated on the drawings.
2. “Open Rain Screen” and “Pressure Equalized” principle.
3. Sealed unit glazed system.

### **1.2 RELATED SECTIONS**

1. Division 8B – Fixed Window System
2. Division 8C – Operable Window System
3. Division 8D – Thermal Door Specification

### **1.3 REFERENCE STANDARDS**

1. ASTM E283-04 (2012) Standard Test Method for Determining Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.
2. ASTM E331-00 (2009) Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors and Curtain Walls by Uniform Static Air Pressure Difference.
3. ASTM E330/E330M-14 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
4. ASTM E90-09 (or ASTM E1425) Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
5. AAMA 1503-09 (or NFRC 100/500) Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Window, Doors and Glazed Wall Sections.
6. AAMA 507-12 Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings.
7. NFRC 102-2004 Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems.
8. NFRC 100-20-500 SSG-2014 Procedure for Determining Fenestration Product Solar Heat Gain.
9. AAMA 501.1-05 Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure.
10. AAMA 501.4-09 Recommended Static Test Method for Evaluating Curtain Wall and Storefront Systems Subjected to Seismic and Wind Induced Interstory Drifts.
11. AAMA 501.5-07 Thermal Cycling of Exterior Walls.

### **1.4 ADMINISTRATIVE REQUIREMENTS**

#### **A. Co-ordination:**

1. Notify concerned trades of items required to be incorporated into work of separate Sections. Certain components specified under this Section include items which are closely integrated with air/vapour barrier transitions, entrances, glazing components, flashing pieces and architectural metalwork specified under

separate Section and consequently require close co-ordination with such allied trades. Perform total co-ordination required to ensure correct installation procedures and results.

2. Co-ordinate and co-operate with metal panel system trades by installing panel system closures and trim supplied by such trades and installed directly into curtain wall system.

B. Pre-installation Meetings:

1. Arrange pre-installation meeting 1 week prior to commencing work with parties associated with this trade as designated in Contract Documents or as requested by the Consultant. Presided over by Contractor, include Consultant who may attend, Subcontractor performing work of this trade, testing company's representative and consultants of applicable discipline. Review Contract Documents for work included under this trade and determine complete understanding of requirements and responsibilities relative to work included, storage and handling of materials, materials to be used, installation of materials, sequence and quality control. Project staffing, restrictions on areas or work and other matters affecting construction, to permit compliance with intent of work of this Section.
2. Review installation methods, procedures, time schedule and conditions under which work shall proceed, including manufacturer's written instructions and co-ordination required with related work.
3. Review and finalize construction schedule, verify availability of materials, experienced installer, equipment and facilities needed to make progress and avoid delays.

## 1.5 SUBMITTALS

A. Product Data: Manufacturer's standard product data sheet indicating description, component sizes and features of curtain wall.

B. Submit Shop Drawings for Consultant's review before any work is fabricated. In addition to minimum requirements indicate following:

1. Indicate with plans, sections, elevations and sufficient full size details to indicate components and methods of assembly, materials, finishes, colour and their characteristics relative to their purpose and other fabrication information.
2. Identify and describe material types and components being supplied, their manufacturers, wall thicknesses of extrusions and shapes including connections and grades, attachments, reinforcing, anchorage and locations of fastenings.
3. Site measure existing openings and document measurements on the shop drawings.
4. Allowances for thermal and structural movement between components and thermal isolation materials.
5. Line of airseal, water drainage, venting and water shed continuous, clearly shown and defined, including continuity of air seal and membrane flashing with adjacent trades.
6. Include description of materials, metal finishing specifications and other pertinent information.
7. Ensure a licensed professional engineer specified herein is responsible for:
  - a. Production and review of Shop Drawings.

- b. Sealing and signing each Shop Drawing and any associated calculations performed.
- 8. Provide copies of final review Shop Drawings as required for submission to authorities having jurisdiction.
- C. Samples: Submit 3 samples in accordance with Section 01 30 00, minimum 300 mm (12") square of curtain wall with each specified glass type or metal panel colour and edge seals.
- D. Test and Evaluation Reports: Prior to fabrication of curtain wall, submit certified test data performed by an independent approved laboratory displaying results of testing program carried out on a typical curtain wall system.
- E. Manufacturer's Instructions: Follow manufacturer's written documentation of installation, storage and other related instructions for optimum installation.
- F. Record Documents and "As-Built" Drawings:
  - 1. As Work progresses, clearly mark changes and deviations from Shop Drawings onto a bound set of white prints.
  - 2. Keep prints available at site for periodic inspection throughout duration of work. Pay particular attention to accurately dimensioning the exact location of concealed work, noting work concealed in inaccessible locations.
  - 3. When work is complete and ready for inspection, neatly transfer as-built information from marked-up prints mentioned above and onto a set of Contract Drawings on the most recent revision and submit to the Consultant.

#### 1.6 CLOSEOUT SUBMITTALS

- 1. Maintenance Data: For subsequent periodic maintenance, submit copy of AAMA 609 and 610-02 "Cleaning and Maintenance Guide for Architecturally Finished Aluminum".
- 2. Warranty Documentation: Include sample warranty in accordance with the requirements of the Contract Documents.

#### 1.7 QUALITY ASSURANCE

- A. Manufacturer: to have minimum of five years' experience with similar systems.
- B. Installer: Provide work of this Section executed by competent installers with minimum 10 years' experience in the application of curtain wall products, systems and assemblies specified and with approval and training of product manufacturer.
- C. Licensed Professionals: Employ a licensed engineer carrying minimum of \$2,000,000.00 professional liability insurance and is registered in the Province of Ontario]having minimum 5 years' experience in design of curtain wall and aluminum panels.
- D. Sealant Certification:
  - 1. Submit written certification from sealant manufacturer that sealant applications in specified systems have been reviewed and approved as completely appropriate for their intended uses in systems as shown and detailed on Shop Drawings, designating drawing number, data and revision, with regard to design criteria and other requirements of the Contract Documents and compatibility with components and adjacent materials

together with life expectancy of sealant materials detailed and specified. Ensure specific reference is made to compatibility of glass edge seal with adjacent materials, together with life expectancy of sealant materials detailed and specified.

2. Submit Product information on the sealant to be used, complete with recommendations and installation instructions.
3. Structural Silicone Design: Provide statement and test data from silicone sealant manufacturer indicating stresses on silicone sealant, per dimensions shown on Shop Drawing details are in accordance with ASTM C1184 and ASTM C1401.
4. Ensure sealants are verified by SWRI in accordance with ASTM C719 and ASTM C661.
5. Provide to sealant manufacturer Shop Drawings showing size of lites, design loads and sealant dimensions for evaluation and statement on stress.

#### E. Sealed Glazed Units

1. Submit to Consultant a written certification from sealed unit manufactured that sealed units of curtain wall assemblies have been reviewed as completely appropriate for their intended use in system shown. They are to be detailed on Shop Drawings, designating drawing number, data and requirements of the Contract Documents, compatibility with components and adjacent materials and thermal safety of glass constructions together with life expectancy of glazing materials detailed and specified in the glazing system.
2. Take into account any stresses developing from solar radiation or other causes (prior to or during installation of the glass) and allow for protection or methods of handling and storage of glass to avoid such stresses and conform to safety requirements for glass application as set out in ASTM C1036.
3. Ensure sealed units are capable of being removed and replaced from exterior. Submit to Consultant detail drawing indicating procedure for removal and replacement of any damaged sealed unit of glass.

### 1.8 MOCK-UPS

1. Erect visual mock-up at designated location for Consultant's review, minimum 1 bay in width and include height sufficient to include 2 vision panels and 1 spandrel panel above and below such vision panels. Ensure mock-up is complete including but not necessarily limited to correct glass, spandrel glass panels, insulated metal air/vapour barrier, connections, firestopping, sealants, air seal gaskets and anchorage systems.
2. Adjust mock-up at no extra cost to Owner as required to obtain acceptance.
3. Mock-up when accepted becomes part of completed work and minimum standard in matching balance of work, subject to passing of tests.

### 1.9 DELIVERY, STORAGE AND HANDLING

1. Store components to permit natural ventilation over finished surfaces.
2. Under conditions of high humidity, supply heating or forced air ventilation to prevent accumulation of surface moisture.

### 1.10 SITE CONDITIONS

1. Ambient Conditions: Maintain surface of substrates and ambient temperatures constantly between 5°C (41°F) and 38°C (100°F) during application and curing of sealants, and during installation of glazing.

## 1.11 MANUFACTURER WARRANTY

1. Warrant work of this Section for a period of ten (10) years against defects and/or deficiencies in accordance with General Conditions of Contract. Promptly correct any defects of deficiencies which become apparent within warranty period, to satisfaction of the Consultant and at no expense to Owner. Defects include but are not limited to: weathertightness of curtain wall, structurally sound and free from distortion, deflection, misalignment, continuity of air/vapour barrier, insulating glass units are free from condensation, fogging of material, obstruction of vision, loosening of glazing and anchorage buckling, water penetration beyond air/vapour seal, fading, discolouration of finish, failure of glazing, joint sealant against staining, adhesion and cohesion, bond failure and extensive colour fading.
2. Warrant factory sealed insulating units against defects for a period of ten (10) years. Warrant factory sealed insulating units free from material obstruction of vision as a result of dust or film formation on internal glass surfaces by any cause, under normal conditions anticipated under this Project, other extrinsic glass breakage, but including breakage due to thermal shock and temperature differential due to inherent glass or glazing fault
3. Provide sealant manufacturer's 20 year materials warranty and limited labour warranty, including statement that sealants used in the work will not cause porous substrates to become discoloured or change their appearance due to fluid migration.

## 2 PRODUCTS

### 2.1 MANUFACTURER

- A. Glazed Aluminum High Performance Curtain Wall: Series 8200 by Commdoor Aluminum, 471 Chrislea Road, Woodbridge, Ontario, L4L 8N6 or equal in all regards by Alumicor, Windspec, Kawneer or other.
- B. Curtain wall system shall be compatible with all doors and vents, and be from the same manufacturer.

### 2.2 MATERIALS

- A. Aluminum Extrusions: 6063-T6 alloy or equivalent. Frame members (back section) to be based upon published wind load charts to meet specified wind load from manufacturer and site conditions.
- B. Thermal Break: 20 mm (13/16") Polyamide thermal break strip
- C. Glazing: 25.4 mm (1") sealed unit of 6 mm Solarban 60 tempered/6mm clear tempered with argon gas.
- D. Exterior Glazing Gasket: Extruded EPDM flexible gasket.
- E. Interior Glazing Gasket: Extruded EPDM flexible gasket.
- F. Fasteners: Stainless steel.

G. Finish:

Fluoropolymer paint coating based on PPG Duranar XL Extrusion Coatings in Green (UC140162XL). Colour selection to be finalized by Owner prior to fabrication.

- H. Caulking: Shall be "Dymeric" by Tremco, EP-6000 by CGE, or equal multi-component chemical curing sealant meeting CAN2-19.24-M80. Exterior colour to match window framing. Interior colour to match adjacent finish.

## 2.3 DESIGN CRITERIA

A. Acceptable Product Characteristics

1. Air Infiltration (ASTM E283) 0.28 L/s/m<sup>2</sup> (0.04 cfm/ft<sup>2</sup>)
2. Water Resistance, Static (ASTM E331) No leakage at a static air pressure differential at 960 Pa (20 psf) and 436 PA (30 psf).
3. Uniform Load (applied In the positive and negative direction) (ASTM E331)
  - a. At 2563 mm (102-1/2") span for split mullion
    - i. 100 mm (4") mullion 4SSG: 1.676 kPa (35 psf).
    - ii. 100 mm (4") captured: 2.394 kPa (50 psf).
  - b. At 3600 mm (144") span for stick system
    - i. 100 mm (4") mullion 1.676 kPa (35 psi) SSG: 1.197 kPa (25 psf).
    - ii. 100 mm (4") mullion captured: 1.436 kPa (30 psf).
  - c. At 4063 mm (162-1/2") span for stick system
    - i. 133 mm (5-1/4") mullion captured: 1.915 kPa (40 psf).
  - d. At 4063 mm (162-1/2") span for split mullion
    - i. 133 mm (5-1/4") mullion SSG: 1.676 kPa (35 psf).
4. Structural (at test load equal to 1.5 times specified test load

No glass breakage occurred nor permanent deflection of framing members exceeded of 0.1% of their clear spans

5. Thermal Resistance, U-factor (AAMA 1503 or NFRC 100)  
Thermal transmittance (U-factor) and Condensation Resistance (CRF):
  - a. 6 mm (1/4") Clear, 13 mm (1/2") air space, 6 mm (1/4") Clear, aluminum space
    - i. U-value: 0.65 BTU/hr/ft<sup>2</sup>/°F
    - ii. CRF 39
  - b. 6 mm (1/4") SN 68, 13 mm (1/2") argon, 6 mm (1/4") Clear, warm edge Spacer
    - i. U-value: 0.32 BTU/hr/ft<sup>2</sup>/°F.
6. Sound Transmission Loss (ASTM E90 and ASTM E1425) STC and Outdoor/Indoor Transmission Class (OITC) shall not be less than:
  - a. STC 33 or OITC 27 when tested with base 25 mm (1") insulating glass.

## 2.4 SHOP FABRICATION



1. Fabricate according to approved shop drawings with joints assembled tight and watertight sealed at moisture barrier using manufacturer provided assembly brackets to maintain integrity of joinery.

### **3 EXECUTION**

#### **3.1 VERIFICATION OF CONDITIONS**

1. Verify actual site dimensions and location of adjacent materials prior to commencing work. Notify consultant in writing of any conditions that would be detrimental to installation.
2. Ensure openings and recesses to receive work of this Section are within acceptable tolerances.
3. Commencement of work implies acceptance of previously completed work.

#### **3.2 PREPARATION**

1. Ensure masonry and concrete surfaces to receive adhesives and sealants are dry, firm, sound, smooth, suitable for bond, and free from loose material, projections, ice, frost, slick, grease, oil, and other matter detrimental to bond.
2. Remove dust and other loose material from openings.

#### **3.3 INSTALLATION**

- A. Install curtain wall according to manufacturer's written instructions in conjunction with approved shop drawings.
- B. Perform Work with skilled, qualified personnel using proper equipment to expedite project in an efficient professional manner.
- C. Supply anchorage devices and inserts (as required) to appropriate trades where required for building in or casting-in-place and instruct as to proper location and position.
- D. Erect Work plumb and true in proper alignment and relationship to established lines and grades.
- E. Erection Tolerances: Maintain following tolerances:
  1. Maximum variation from plane or location shown on Shop Drawings: 1.6 mm (1/16") in 4420 mm (14'-6") of length.
  2. Maximum offset from true alignment between 2 identical members abutting end-to-end in line: 0.8 mm (1/32").
  3. Racking of face: 3 mm (1/8") maximum.
  4. Racking in elevation: nil.
  5. Deviation from true plumb over full height of building: maximum 6 mm (1/4").
  6. Deviation from true straightness in plane over full length of each building face; maximum 6 mm (1/4").

7. Maximum variation in any column-to-column space or 6 m (20'-0") run: 3 mm (1/8").
8. Ensure tolerances of relationship of individual components are as follows:
  - a. Member to member, maximum 0.4 mm (1/64").
  - b. Out of plane between faces of 2 halves of split mullions, 0.8 mm (1/32").
9. Joint width, mullion snap-on cap to mullion snap-on cap; maximum 1.6 mm (1/16"). Ensure each joint is of uniform width.
10. Joint width between soffits and base and sill panels; maximum 3 mm (1/8") and of uniform width within a 3 m (10'-0") length. Do not apply sealants to joints between panels; use only "dry" gasket system of sealing.
11. Keep panel joints to a minimum and as shown. Ensure panel sizes are uniform and to direction of the Consultant.
12. Tolerances are not cumulative.
13. Short length distortion ripples, edge distortions, "oil canning", "telegraphing of fasteners" and like will not be permitted. Make provisions to allow for differential thermal expansion between stiffeners, recessed slots and exposed metal of curtain wall system to take place without noise and without buckling of surface.
14. Dimensional tolerances of outer dimensions of panels: +/-0.8 mm in 1220 mm (+/-1/32" in 4'-0") measured at any point.

### 3.4 SITE QUALITY CONTROL

#### A. Site Tests and Inspections:

1. Structural Inspection: Ensure a licensed professional engineer specified herein inspects work of this Section during erection/installation and provides a sign-off letter following acceptance.

#### B. Water Penetration Testing

1. **Conduct field water penetration tests on the first fully complete curtain wall installation with sufficient hose stream to confirm if there is any leakage to the satisfaction of the Owner and the Consultant.**
2. Modify and alter installation as necessary to obtain required test results at no cost to Owner. Pay cost of re-testing. Pay costs for modification and re-fabrication of rejected test units or portion thereof until tests are completed satisfactorily.

- C. Non-Conforming Work: Replace damaged work which cannot be satisfactorily repaired, restored or cleaned, to satisfaction of the Consultant at no cost to Owner.

### 3.5 CLEANING

1. Clean work of this Section in accordance with "Cleaning Procedure" as recommended by American Architectural Manufacturing Association in publication "Cleaning and Maintenance Guide for Architecturally Finished Aluminum" AAMA 609 & 610-02 (2002), and as recommended by finish applicator.
2. Clean and polish glass in accordance with Glass Association of North America (GANA) 1-0300 including removal of markings indicating presence of glass.

### 3.6 PROTECTION

1. 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.

**END OF SECTION**

# **DIVISION 8B - FIXED ALUMINUM WINDOW SYSTEM**

## **PART 1 - GENERAL**

### **1.1 Work Included**

Furnish labour, materials and services for the complete fabrication, assembly and installation of Series 425 (frame depth as required for the specific window location) fixed window system manufactured by Commdoor Aluminum, or equal by Alumicor, Windspec, Kawneer or other.

### **1.2 Quality Assurance**

The Fixed Window System supplied under this specification must comply to the performance requirements of the ASTM – E 283, E 331, E 547, E 330 and F 588. A copy of the test report from an independent testing laboratory certifying compliance must be furnished upon request by the owner/architect.

### **1.4 Shop Drawings**

Site measure existing openings and document measurements on the shop drawings and submit for approval. All work of this section shall be executed in strict accordance with approved shop drawings.

### **1.5 Extended Warranty**

The work of this section shall be guaranteed against defects of materials and workmanship for a period of ten (10) years from date of certificate of substantial completion (aluminum window system and sealed thermal glazed units).

## **PART 2 - PRODUCTS**

### **2.1 Material**

#### **2.1.1 Aluminum Extrusion**

A) All extruded aluminum sections to be 6063-T6 alloy or equivalent.

B) Frame members size will be based on published wind load charts to meet specified wind load.

#### **2.1.2 Thermal Break**

If applicable, extruded virgin polyvinyl chloride (P.V.C).

#### **2.1.3 Glazing**

25.4 mm (1") sealed unit of 6 mm clear tempered/6mm clear tempered with argon gas.

#### **2.1.4 Glazing Material**

Exterior Glazing:

Macro-polyisobutylene tape with a continuous built in shim; highly adhesive and elastic.

Interior Glazing:

Extruded thermoplastic elastomers gasket.

#### **2.1.5 Fasteners**

Fasteners shall be stainless steel.

#### **2.1.6 Caulking**

Shall be "Dymeric" by Tremco, EP-6000 by CGE, or equal multi-component chemical curing sealant meeting CAN2-19.24-M80. Exterior colour to match window framing. Interior colour to match adjacent finish.

### **2.2 Fabrication**

Fabrication will be carried out according to the approved shop drawings. All joints will be assembled tight using manufactures provided assembly brackets to maintain the product design performance.

### **2.3 Finish**

#### **2.3.3 Fluoropolymer paint Coating**

Fluoropolymer paint coating based on PPG Duranar XL Extrusion Coatings in Green (UC140162XL), or equal. Colour selection to be finalized by Owner prior to fabrication.

## **PART 3 - EXECUTION**

### **3.1 Protection**

Aluminum shall be isolated from concrete, mortar, plaster and dissimilar materials with a coating of Bituminous paint.

Exposed aluminum surface shall be protected from long term contamination of mortar, concrete, paint, mud, etc.

### **3.2 Installation**

Products to be installed according to manufacturers instructions and in conjunction with approved shop drawings. The work shall be performed by qualified skilled personnel using proper equipment in order to expedite the project in an efficient professional manner.

### **3.3 Cleaning**

Interim and final cleaning shall be performed in accordance with the general conditions listing methods outlined in AAMA 609 and 610-2 (2002).

# **DIVISION 8C - OPERABLE ALUMINUM WINDOW SYSTEM**

## **PART 1 - GENERAL**

### **1.1 Work Included**

Furnish labour, materials and services for the complete fabrication, assembly and installation of Series 225 operable window system manufactured by Commdoor Aluminum, or equal by Alumicor, Windspec, Kawneer or other.

### **1.2 Quality Assurance**

The Operable Window System supplied under this specification must comply to the performance requirements of AAMA/WDMA/CSA 101/I.S.2/A440-05, for casement and awning window with product designation C-C80 (914 x 1524) and AP C65 (1524 x 914) respectively.. A copy of the test report from an independent testing laboratory certifying compliance must be furnished upon request by the owner/architect.

### **1.3 Shop Drawings**

Site measure existing openings and document measurements on the shop drawings and submit for approval. All work of this section shall be executed in strict accordance with approved shop drawings.

### **1.4 Extended Warranty**

The work of this section shall be guaranteed against defects of materials and workmanship for a period of ten (10) years from date of certificate of substantial completion (aluminum window system and sealed thermal glazed units).

## **PART 2 - PRODUCTS**

### **2.1 Material**

#### **2.1.1 Aluminum Extrusion**

- A) All extruded aluminum sections to be 6063-T6 alloy or equivalent.
- B) Frame members size will be 2-1/4".

#### **2.1.2 Thermal Break**

If applicable, extruded virgin polyvinyl chloride (P.V.C).

#### **2.1.3 Glazing**

25.4 mm (1") sealed unit of 6 mm clear tempered/6mm clear tempered with argon gas.

#### **2.1.4 Glazing Material**

Exterior Glazing:

Macro-polyisobutylene tape with a continuous built in shim; highly adhesive and elastic.

Interior Glazing:

Extruded thermoplastic elastomers gasket.

#### **2.1.5 Fasteners**

Fasteners shall be stainless steel.

#### **2.1.6 Caulking**

Shall be "Dymeric" by Tremco, EP-6000 by CGE, or equal multi-component chemical curing sealant meeting CAN2-19.24-M80. Exterior colour to match window framing. Interior colour to match adjacent finish.

### **2.2 Fabrication**

Fabrication will be carried out according to the approved shop drawings. All joints will be assembled tight using manufactures provided assembly brackets to maintain the product design performance.

## **2.3 Finish**

### **2.3.3 Fluoropolymer paint Coating**

Fluoropolymer paint coating based on PPG Duranar XL Extrusion Coatings in Green (UC140162XL), or equal. Colour selection to be finalized by Owner prior to fabrication.

## **PART 3 - EXECUTION**

### **3.1 Protection**

Aluminum shall be isolated from concrete, mortar, plaster and dissimilar materials with a coating of Bituminous paint.

Exposed aluminum surface shall be protected from long term contamination of mortar, concrete, paint, mud, etc.

### **3.2 Installation**

Products to be installed according to manufacturers instructions and in conjunction with approved shop drawings. The work shall be performed by qualified skilled personnel using proper equipment in order to expedite the project in an efficient professional manner.

### **3.3 Cleaning**

Interim and final cleaning shall be performed in accordance with the general conditions listing methods outlined in AAMA 609 and 610-2 (2002).

# **DIVISION 8D – ALUMINUM THERMAL DOOR SPECIFICATION**

## **PART 1 - GENERAL**

### **1.1 Work Included**

Furnish labour, materials and services for the complete fabrication of Series 4300 Thermal Door manufactured by Commdoor Aluminum, or equal by Alumicor, Windspec, Kawneer or other.

### **1.2 Shop Drawings**

Site measure existing openings and document measurements on the shop drawings and submit for approval. All work of this section shall be executed in strict accordance with approved shop drawings.

### **1.3 Extended Warranty**

The work of this section shall be guaranteed against defects of materials and workmanship for a period of ten (10) years from date of certificate of substantial completion (aluminum door system and sealed thermal glazed units).

## **PART 2 - PRODUCTS**

### **2.1 Material**

#### **2.1.1 Aluminum Extrusion**

All extruded aluminum sections to be 6063-T6 alloy or equivalent.

#### **2.1.2 Glazing**

25.4 mm (1") sealed unit of 6 mm clear tempered/6mm clear tempered with argon gas.

#### **2.1.3 Glazing Material**

All Extruded thermoplastic elastomers gasket.

#### **2.1.4 Fasteners**

Fasteners shall be stainless steel.

#### **2.1.5 Caulking**

Shall be "Dymeric" by Tremco, EP-6000 by CGE, or equal multi-component chemical curing sealant meeting CAN2-19.24-M80. Exterior colour to match window framing. Interior colour to match adjacent finish.

### **2.2 Hardware**

#### **2.2.1 Hinge**

Butt hinges in stainless steel.

#### **2.2.2 Locking Devices**

Keyed cylinder on exterior and thumb turn on interior .

#### **2.2.3 Handles**

12" D-pull on the exterior and push bar on interior.

#### **2.2.4 Door Closer and Holder**

Provide door closers and hold opens.

#### **2.2.5 Threshold**

Accessible threshold 4-7/8" wide x 15/16" high.

### **2.3 Fabrication**

Fabrication will be carried out according to the approved shop drawings. All joints will be welded using manufacturers provided assembly brackets to maintain the product design performance.

### **2.4 Finish**

#### **2.4.3 Fluoropolymer paint Coating**

Fluoropolymer paint coating based on PPG Duranar XL Extrusion Coatings in Green (UC140162XL), or equal. Colour selection to be finalized by Owner prior to fabrication.



## **PART 3 - EXECUTION**

### **3.1 Protection**

Aluminum shall be isolated from concrete, mortar, plaster and dissimilar materials with a coating of Bituminous paint.

Exposed aluminum surface shall be protected from long term contamination of mortar, concrete, paint, mud, etc.

Doors and door frames shall be protected from impact damage by wood sheathing and plastic wraps.

### **3.2 Installation**

Products to be installed according to manufacturers instructions and in conjunction with approved shop drawings. The work shall be performed by qualified skilled personnel ensuring proper equipment provided in order to expedite the project in an efficient professional manner.

### **3.3 Cleaning**

Interim and final cleaning shall be performed in accordance with the general conditions listing methods outlined in AAMA 609 and 610-2 (2002).