

1 General

1.1 **SECTION INCLUDES**

.1 Design, labour, Products, tool, equipment and services necessary for special function glazed system work in accordance with the Contract Documents.

1.2 **REFERENCES**

.1 AAMA CW-10, Care and Handling of Architectural Aluminum from Shop to Site.

.2 ANSI H35.1M, Alloy and Temper Designation Systems for Aluminum (Metric).

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

.4 ASTM A276, Specification for Stainless and Heat-Resisting Steel Bars and Shapes.

.5 ASTM B209M, Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

.6 ASTM B221M, Specification for Aluminum-Alloy Extruded Bars, Rods, Wires, Profiles and Tubes.

.7 ASTM C920, Specification for Elastomeric Joint Sealants.

.8 ASTM F738M, Specification for Stainless Steel Metric Bolts, Screws, and Studs.

.9 CSA W59-M, Welded Steel Construction (Metal Arc Welding).

1.3 **DESIGN REQUIREMENTS**

.1 Design the entire special function glazed systems, including framing and supports as required.

.2 Prevent deflection and permanent or progressive glazing displacement. Restrict horizontal and vertical mullion deflection to less than $L/175$ (under uniformly distributed positive design wind load), and 10 mm maximum regardless of span.

.3 Design anchorage inserts for installation as part of other Sections of Work. Design anchorage assemblies with a minimum safety factor of 2.0.

.4 Design members to withstand dead load and live loads calculated in accordance with OBC and applicable local regulations, to maximum allowable deflection of $1/360$ of span and windspeed of 130 mph.

1.4 SUBMITTALS

- .1 Shop Drawings:
 - .1 Submit Shop Drawings in accordance with Section 01 10 10 indicating:
 - .1 Plans, sections, details, type of extrusions, profiles, thicknesses, seals, finishes, panels, operating components, related flashings, closures, fillers, and end caps, and sealants.
 - .2 Products and glazing types.
 - .3 Anchorage inserts, system installation tolerances.
 - .4 Section and hardware reinforcement, anchorage, assembly fixings.
 - .5 Detailing, locations, and allowances for movement, expansion, contraction.
- .2 Samples:
 - .1 Submit two samples of following in accordance with Section 01 10 10.
 - .1 250 mm long samples of each type of extrusion and finish.
 - .2 250 x 200 mm samples of glass.
- .3 Reports/Certificates:
 - .1 Submit documentation to substantiate ten years of experience in glazed window manufacture and installation.
 - .2 Submit written manufacturer's certificate certifying compliance with the specifications.
- .4 Close-out submittals: Submit data for incorporated into the Operations and Maintenance Manual as part of Section 01 10 10.
- .5 Extended warranty: Submit extended warranty signed and registered by the manufacturer providing the warranty in the name of the Owner for the timeframe and coverage specified in this Section.

1.5 QUALITY ASSURANCE

- .1 Retain a licensed Professional Engineer, registered in Province of Ontario, to perform following services for special function glazed system work:
 - .1 Design of special function glazed system.
 - .2 Review, stamp, and sign Shop Drawings.
 - .3 Conduct on-Site inspections and prepare and submit inspection reports.

1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Handle glazed window work in accordance with AAMA CW-10.
- .2 Protect surfaces with strippable coating. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather. Do not remove before final cleaning of building.
- .3 Deliver windows crated to provide protection during transit and job storage.

- .4 Inspect windows upon delivery for damage. Unless minor defects can be made to meet the Consultant's specifications and satisfaction, damaged parts should be removed and replaced.
- .5 Store windows at building site under cover in dry location.

1.7 **SITE CONDITIONS**

- .1 Field measurements: Check opening by accurate field measurement before fabrication. Show recorded measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delay of work.

1.8 **EXTENDED WARRANTY**

- .1 Submit an extended warranty for glazed window work in accordance with General Conditions, except that warranty period is extended to 5 years from the date of Substantial Performance.
 - .1 Warrant against failure to meet the design criteria and requirements.
 - .2 Coverage: Complete replacement including affected adjacent work.

2 **Products**

2.1 **ACCEPTABLE MANUFACTURER(S) AND SYSTEM(S)**

- .1 Pass-through window:
 - .1 Provide extruded aluminum pass-through window with 12mm clear tempered class and complete with deal tray.
 - .2 Shelf and deal tray: Manufacturer's standard stainless steel shelf with built-in deal tray or transaction drawer.
 - .4 Material and finish: Extruded aluminum with manufacturer's standard powder coat finish, conforming to AAMA 2605, in colour as selected by the Consultant.

2.2 **MATERIALS**

- .1 General: All materials under work of this Section, including but not limited to, sealants and coatings are to have low VOC content limits.
- .2 Stainless steel sheet and channels: ASTM A167, Type 316. Size as shown.
- .3 Stainless steel shapes: ASTM A276, Type 316. Sizes and shapes as shown.

- .4 Aluminum extrusions and channels: ASTM B221 and ANSI H35.1 AA6063 alloy, T6 temper. Profile and dimensions: Refer to Contract Drawings.
- .5 Aluminum sheet: ASTM B209 and ANSI H35.1 AA1100 aluminum alloy, H14 temper, minimum 1.29 mm for sheets less than 610 mm wide and minimum 2.05 mm for sheets of a greater dimension.
- .6 Reinforcements and anchors: ASTM A167, Type 316. Size as shown.
- .7 Glass and glazing materials: In accordance with Section 08 80 00.
- .8 Glazing gasket: EPDM roll-in glazing gasket.
- .9 Frame sealant: Type as recommended by the glazed window work manufacturer.
- .10 Joint backing: Closed cell foam polyethylene rod, oversized minimum 30-50% larger than joint width and compatible with joint sealant. Product as recommended by sealant manufacturer.
- .11 Anchors, clips, and angles: Stainless steel.
- .12 Closures and trim: 1 mm minimum aluminum sheet to match glazed window.
- .13 Screws, bolts and other fasteners: ASTM F738M; Stainless Steel Type 316.

2.3 **FABRICATION**

- .1 Fabricate sections true to detail, free from defects impairing appearance, strength and durability. Fabricate extrusions with sharp, well defined corners.
- .2 Fabricate, fit, and secure framing joints and corners accurately, with flush surfaces, and hairline joints. Apply frame sealant at joints for weatherproof seams.
- .3 Conceal anchors, reinforcement and attachments from view. Fabricate reinforcement in accordance with design requirements.
- .4 Do not expose manufacturer's identification labels on glazed window assemblies.
- .5 Fabricate continuous sill flashings with intermediate anchor clips, and joint reinforcing, form to profile shown. Fabricate filler and closure pieces as necessary for a complete and weather tight installation.
- .6 Fabricate glazed system work closures and trim from aluminum sheet as required to match system.

3 Execution

3.1 **EXAMINATION**

- .1 Verify condition and dimensions of previously installed work upon which this Section depends. Report defects to Consultant. Commencement of work of this Section means acceptance of existing conditions.

3.2 **INSTALLATION**

- .1 Install special function glazed system work in accordance with reviewed Shop Drawings and manufacturer's written instructions.
- .2 Install work of this Section securely, in correct location, level, square, plumb, at proper elevations, free of warp or twist.
- .3 Install flashings, closures, and trim pieces.
- .4 Install sills in maximum lengths possible. For sills over 1200 mm in length, maintain 3 mm to 6 mm space at each end.
- .5 Reserved.
- .6 Adjust operable parts for correct function.
- .7 Remove damaged or unacceptable Products and assemblies from Site and replace to Consultant's acceptance.
- .8 Install glass presence markers, in two cross stripes extending from diagonal corners. Maintain markers until final clean-up.

3.3 **ERECTION TOLERANCES**

- .1 Tolerances: Non-cumulative.
- .1 Maximum variation from plumb: 1.5 mm/3 m non-cumulative or 12 mm/30 m, whichever is less.
- .2 Maximum misalignment of two adjoining members abutting in plane: 0.8 mm.
- .3 Vertical and horizontal positions: +/- 3 mm.
- .4 Racking of face: 6 mm, nil in elevation.
- .5 Maximum perimeter sealant joint between glazed windows and adjacent construction: 12 mm.

3.4 **JOINT BACKING AND SEALANT WORK**

- .1 Prepare substrate surface and mask as recommended by sealant manufacturer.
- .2 Install joint backing and sealant at glazed window work and perimeter joints for sound tight installation in accordance with sealant manufacturer's instructions. Tool sealant. Remove excess sealant.

3.5 **CLEANING**

- .1 Maintain glazed window work, inside and outside, in clean condition throughout construction period.
- .2 Remove labels, protective material, and glass presence markers from prefinished surfaces.
- .3 Wash glazed window work with solution of mild detergent in warm water, with particular attention to recesses and corners. Wipe surfaces clean and dry.

END OF SECTION