

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 glass 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, outsized 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