SECTION  – all glass entrances

1. General
   1. SUMMARY
      1. This Section includes requirements for the supply and installation of interior all glass entrance systems.
   2. Definitions
      1. Equal Dimensions: Entrance system assemblies indicating equal dimensions on the Drawings shall be calculated to align with in‑place structural elements followed by even division of the space between structural elements. This shall mean that entrance system materials are evenly spaced between adjacent structural members, not necessarily evenly spaced across the entire wall assembly.
   3. Reference Standards
      1. American Architectural Manufacturer’s Association (AAMA):
         1. AAMA 611‑98, Voluntary Specification for Architectural Anodized Aluminum
      2. American National Standards Institute (ANSI):
         1. BHMA A156.4‑2008, Door Closers
         2. BHMA A156.8‑2005, Door Controls ‑ Overhead Stops and Holders
      3. American Society for Testing and Materials (ASTM):
         1. ASTM A666‑03, Standard Specification for Annealed or Cold Worked Austenitic Stainless-Steel Sheet, Strip, Plate and Flat Bar
         2. ASTM B209/209M‑07, Standard Specification for Aluminum and Aluminum‑Alloy Sheet and Plate
         3. ASTM B221/B221M‑08, Standard Specification for Aluminum and Aluminum‑Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
         4. ASTM B429‑06, Standard Specification for Aluminum‑Alloy Extruded Structural Pipe and Tube
      4. Canadian General Standards Board (CGSB):
         1. CAN/CGSB‑12.1‑M90, Tempered or Laminated Safety Glass
   4. Submittals
      1. Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
      2. Action Submittals: Provide the following submittals before starting any work of this Section:
         1. Product Data: Submit product data including construction details, material descriptions, dimensions of individual components and profiles, and finishes.
         2. Shop Drawings: Submit shop drawings indicating fabrication and installation details including, but not limited to, the following:
            1. Plans, elevations, and sections.
            2. Details of fittings and glazing.
            3. Hardware quantities, locations, and installation requirements.
         3. Samples: Submit samples for each type of exposed finish specified for verification by the Consultant as follows:
            1. Metal Finishes: 150 mm long sections of patch fittings, rails, and other items.
            2. Glass: 150 mm square panels indicating exposed edge finish.
   5. Project Closeout Submissions
      1. Provide operations and maintenance information in accordance with Section 01 33 00 – Submittal Procedures.
   6. Site Conditions
      1. Site Measurements: Verify actual locations of structural supports for all glass entrances systems by site measurements before fabrication and indicate measurements on Shop Drawings.
      2. Established Dimensions: Establish dimensions and proceed with fabricating all glass entrances systems where site measurements cannot be made without delaying the Work; coordinate construction to ensure that actual dimensions correspond to established dimensions.
   7. Warranty
      1. Manufacturer’s Warranty: Provide manufacturer's standard form of warranty covering repair or replacement components of all glass systems that fail in materials or workmanship within a period of two (2) years from date of Substantial Performance; failure of performance requirements will be considered to include but not be limited to, the following:
         1. Deflection exceeding specified limits.
         2. Loosening or weakening of fasteners, attachments, and other components.
         3. Failure of operating units to function properly.
2. Products
   1. Manufacturers
      1. Basis-of-Design Products: Products named in this Section were used as the basis-of-design for the project; additional manufacturers offering similar products may be incorporated into the work of this Section provided they meet the performance requirements established by the named products and provided they submit requests for substitution a minimum of five (5) days in advance of Bid Closing.
      2. Acceptable Materials Manufacturers: Subject to compliance with requirements specified in this Section and as established by the Basis‑of‑Design Materials, manufacturers offering products that may be incorporated into the Work include but are not limited to, the following:
         1. [Dorma Door Controls Inc.](http://www.dorma.com/), DormaGlas.
         2. [C. R. Laurence Co. Inc.](http://www.crlaurence.com/)
         3. [Prelco Inc.](http://www.prelco.ca/), Prelgard Entrance Systems.
         4. Oldcastle Glass, [Vistawall Entrance Systems](http://www.vistawall.com/).
   2. Materials

SPEC NOTE: Add the GL# as indicated in the Product and Finish Schedule.

* + 1. Tempered Glass (GL-#): In accordance with CAN/CGSB‑12.1 and as follows:
       1. Thickness: 13 mm
       2. Type: 2 ‑ Tempered.
       3. Class: B ‑ Float Glass.
       4. Colour: Clear, Low-Iron.
       5. Category: II ‑ 540 J impact resistance.
       6. Edges:
          1. Exposed Edges: Flat polished.
          2. Butt Edges: Flat ground.
          3. Corner Edges: Mitred.
    2. Aluminum: Materials recommended by manufacturer for type of use and finish indicated, and as follows:
       1. Sheet and Plate: In accordance with ASTM B209/B209M, and ANSI H35.1 AA1100‑H14, or AA5005‑H32 or H34, anodizing quality.
       2. Extruded Bars, Rods, Profiles, and Tubes: In accordance with ASTM B221/B221M, and ANSI H35.1 AA6063‑T5 or T6, anodizing quality.
       3. Extruded Structural Pipe and Tubes: In accordance with ASTM B429, and ANSI H35.1 AA6061‑T6 or AA6063‑T6, anodizing quality.
       4. Structural Profiles: In accordance with ASTM B308/B308M, anodizing quality.
       5. Welding Rods and Bare Electrodes: CSA W59.2.

SPEC NOTE: Retain the following paragraph when the aluminum components are clad in Stainless Steel. Adds cost to the system but provides the stainless-steel look. Delete if not required on the Project.

SPEC NOTE: Other cladding finishes are available – Bronze and Brass for example. Review with the Specifications leader to provide finishes other then Stainless Steel if needed for the project.

* + 1. Stainless Steel Cladding: In accordance with ASTM A 666, Type 302 or 304 as standard with manufacturer; #4 directional satin finish.
       1. Isolate where necessary to prevent electrolysis due to dissimilar metal-to-metal contact or metal-to-masonry and concrete contact. Use bituminous paint, butyl tape or other approved divorcing material.
  1. Fittings

SPEC NOTE: Ensure the following “finishes” indicated below match the edits made above regarding Stainless Steel or Aluminum.

* + 1. Patch Fittings: Stainless steel-clad aluminum.
    2. Sidelight Channels: Match fitting metal finish.
    3. Rails:
       1. Material: Stainless steel-clad aluminum.
       2. Height: Nominal 90 mm, unless otherwise indicated on the Drawings.
       3. Style: Tapered with flat top.
    4. Accessory Fittings: Match patch fitting and rail metal and finish for the following:
       1. Overhead doorstop.
       2. Center‑housing lock.
    5. Anchors and Fastenings: Concealed.
    6. Weather Stripping: Sweep type.
  1. HARDWARE
     1. Heavy duty hardware units in sizes, quantities, and types recommended by manufacturer of all glass entrances systems, match fitting metal and finish for exposed parts.

SPEC NOTE: Select one of the following paragraphs below and delete the one not required.

SPEC NOTE: Concealed Floor Closers are more expensive and require trenching of the existing concrete floors to allow for wiring of the system and also installation.

* + 1. Concealed Overhead Closer and Bottom Pivots: Center hung overhead concealed door closer, complete with heady duty spring, 105 deg hold-open, and threshold or floor mount bottom pivots.
    2. Concealed Floor Closers and Top Pivots: Center hung; in accordance with BHMA A156.4, Grade 1; including cases, bottom arms, top walking beam pivots, plates, and accessories required for complete installation, and as follows:
       1. Swing: Single acting with positive dead stop coordinated with hold open angle.
       2. Concealed Overhead Holder: BHMA A156.8, Grade 1, with dead‑stop setting coordinated with concealed floor closer.
    3. Push Pull Set: Selected from manufacturer's full range.
    4. Single Door and Active Leaf Locksets: Bottom fitting or bottom rail deadbolt; deadbolt operated by key outside, and thumb turn inside.
    5. Cylinders: As specified in Section 08 70 00 - Hardware.
    6. Exit Devices: As specified in Section 08 70 00 - Hardware.
  1. ACCESSORY MATERIALS
     1. Bituminous paint: Isolation coating, acid, and alkali resistant asphaltic paint in accordance with MPI Architectural Painting Specification Manual “Approved Product” listing MPI#35.
     2. Structural sealant: Clear structural glazing, shore A hardness 15-25, conforming to CAN/CGSB-19.13-M, Classification C-1-40-B-N and C-1-25-B-N, and ASTM C920, Type S, Grade P, Class 25, use T, M.
        1. Acceptable material:
           1. Chemtron Multiseal.
           2. Tremco Spectrum 2 or Proglaze II.
     3. Glazing Surface Films: Refer to Section 08 87 00 – Glazing Surface Films.
  2. Fabrication
     1. Provide holes and cut outs in glass to receive hardware, fittings, rails, and accessories before tempering glass; do not cut, drill, or make other alterations to glass after tempering:
        1. Fully temper glass using horizontal process and fabricate with roll wave distortion parallel with bottom edge of door or lite when installed.
        2. Factories assemble components and factory install hardware to greatest extent possible.

1. Execution
   1. Examination
      1. Examine areas and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work.
      2. Proceed with installation only after unsatisfactory conditions have been corrected.
   2. Installation
      1. Install all glass systems and associated components in accordance with manufacturer's written instructions.
      2. Set units level and plumb.
      3. Maintain uniform clearances between adjacent components.
      4. Maximum 13 mm sealant space between structural sealant glazed system and adjacent construction.
      5. Install structural sealant glazing system in accordance with manufacturer’s instructions.
      6. Lubricate hardware and other moving parts in accordance with manufacturer's written instructions.
      7. Set, seal, and grout floor closer cases as required to suit hardware and substrate indicated.
   3. ADJUSTING AND CLEANING
      1. Adjust doors and hardware to produce smooth operation and tight fit at contact points and weather stripping.
      2. Remove excess sealant and glazing compounds and dirt from surfaces.
      3. Wash glass on both faces not more than four (4) days prior to declaration of Substantial Performance for the project.

END OF SECTION