

PART 1- GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 07 21 29.03 – Sprayed Insulation – Polyurethane Foam
- .2 Section 07 92 00 – Joint Sealant
- .3 Section 08 80 50 - Glazing

1.2 REFERENCE STANDARDS

- .1 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA 609/610-15, Cleaning and Maintenance Guide for Architecturally Finished Aluminum.
- .2 ASTM International (ASTM)
 - .1 ASTM E 330-E330M-14, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.20-M89, Structural Design of Glass for Buildings.
- .4 CSA Group (CSA)
 - .1 CSA G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CAN/CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
- .5 Underwriters Laboratories (UL)
 - .1 UL 2761-2011 Sealants and Caulking Compounds.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for doors and frames and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements.

- .3 Shop Drawings:
 - .1 Indicate materials and profiles and provide full-size, scaled details of components for each type of door and frame. Indicate:
 - .1 Interior trim and exterior junctions with adjacent construction.
 - .2 Junctions between combination units.
 - .3 Elevations of units.
 - .4 Core thicknesses of components.
 - .5 Type and location of exposed finishes, method of anchorage, number of anchors, supports, reinforcement, and accessories.
 - .6 Location of caulking.
 - .7 Each type of door system including location.
 - .8 Arrangement of reinforcing for hardware and joints.
 - .9 Arrangement of hardware and required clearances.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for cleaning and maintenance of aluminum finishes for incorporation into manual.
- .3 Warranty Documentation: submit warranty documents specified.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .1 Apply temporary protective coating to finished surfaces. Remove coating after erection. Use easy to remove, residue free coatings.
 - .2 Leave protective covering in place until final cleaning of building.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect aluminum doors and frames from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.

1.6 WARRANTY

- .1 Manufacturer's warranty: Submit, for Departmental Representative acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty in addition to and not limit other rights Owner may have under Contract Documents.

PART 2 - PRODUCTS

2.1 SUSTAINABLE REQUIREMENTS

- .1 Materials and products in accordance with Section 01 47 15 – Sustainable Requirements

2.2 DESIGN CRITERIA

- .1 Design frames and doors in exterior walls to:
 - .1 Accommodate expansion and contraction within service temperature range of -35 to 35 degrees C.
 - .2 Limit deflection of mullions to maximum 1/175th of clear span when tested to ASTM E 330 under wind load of 1.2 kPa.
 - .3 Movement within system.
 - .4 Movement between system and perimeter framing components or substrate.
- .2 Size glass thickness and glass unit dimensions to limits in accordance with CAN/CGSB-12.20.
- .3 Include continuous air barrier and vapour retarder through door system. Primarily in line with inside pane of glass and heel bead of glazing compound.

2.3 MATERIALS

- .1 Aluminum extrusions: to Aluminum Association alloy AA 6063-T5 anodizing quality.
- .2 Steel reinforcement: to CSA G40.20/G40.21, grade 300 W.
- .3 Fasteners: stainless steel, finished to match adjacent material.
- .4 Weatherstrip: replaceable mohair backed wool pile.
- .5 Door bumpers: black neoprene.
- .6 Door bottom seal: adjustable door seal of anodized extruded aluminum frame and vinyl weather seal, surface mounted with drip cap, closed ends.
- .7 Isolation coating: bituminous paint.
- .8 Glazing materials: See Section 08 80 50 – Glazing.
- .9 Sealants: colour selected by Departmental Representative in accordance with Section 07 92 00 - Joint Sealants.

2.4 ALUMINUM DOORS

- .1 Construct doors of porthole extrusions with minimum wall thickness of 3 mm.
- .2 Door stiles nominal 101 mm wide plus or minus 6 mm.

- .3 Top rail nominal 101 mm wide plus or minus 6 mm.
- .4 Bottom rail nominal 178 mm wide plus or minus 6 mm.
- .5 Center rail nominal 300 mm plus or minus 6 mm.
- .6 Reinforce mechanically-joined corners of doors to produce sturdy door unit.
- .7 Glazing stops: interlocking snap-in type for dry glazing. Exterior stops: tamperproof type.
- .8 Supply thermally broken doors for exterior.
- .9 Hardware: See Section 08 71 00 – Door Hardware.

2.5 ALUMINUM FRAMES

- .1 Construct thermally broken insulated frames of aluminum extrusions with minimum wall thickness of 3 mm.
- .2 Frame members 51 x 114 mm nominal size, for flush glazing.

2.6 ALUMINUM FINISHES

- .1 Exposed aluminum, surfaces: To AAMA 2604, 2-coat, thermal setting enamel consisting of primer and topcoat with 70% minimum fluoropolymer resin and polyvinylidene fluoride (PVDF), 0.025 mm minimum total thickness coloured white.

2.7 STEEL FINISHES

- .1 Finish steel clips and reinforcing steel with zinc coating to CAN/CSA-G164.

2.8 FABRICATION

- .1 Doors and framing by same manufacturer.
- .2 Fabricate doors and frames to profiles and maximum face sizes as indicated. Provide minimum 22 mm bite for insulating glazed units.
- .3 Provide structural steel reinforcement as required.
- .4 Fit joints tightly and secure mechanically.
- .5 Conceal fastenings.
- .6 Mortise, reinforce, drill and tap doors, frames and reinforcements to receive hardware using templates provided under Section 08 71 00 - Door Hardware.
- .7 Isolate aluminum from direct contact with dissimilar metals, concrete and masonry.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts acceptable for aluminum doors and frames installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Set frames plumb, square, level at correct elevation in alignment with adjacent work.
- .3 Anchor securely.
- .4 Install doors and hardware in accordance with hardware templates and manufacturer's instructions.
- .5 Adjust door components to ensure smooth operation.
- .6 Make allowances for deflection of structure to ensure structural loads not transmitted to frames.
- .7 Glaze aluminum doors and frames in accordance with Section 08 80 50 - Glazing.
- .8 Seal joints to provide weathertight seal at outside and air, vapour seal at inside.
- .9 Apply sealant in accordance with Section 07 92 00 - Joint Sealants. Conceal sealant within aluminum work except where exposed use permitted by Departmental Representative.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .2 Perform cleaning of aluminum components in accordance with AAMA 609.1 - Voluntary Guide Specification for Cleaning and Maintenance of Architectural Anodized Aluminum.
 - .3 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.
 - .4 Clean aluminum with damp rag and approved non-abrasive cleaner.
 - .5 Remove traces of primer, caulking, epoxy and filler materials; clean doors and frames.
 - .6 Clean glass and glazing materials with approved non-abrasive cleaner.

- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by aluminum door and frame installation.

END OF SECTION