
Partie 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 04 22 00 – Concrete Unit Masonry.
- .2 Section 06 10 00 – Rough Carpentry.
- .3 Section 08 71 00 – Door Hardware.
- .4 Section 08 44 13 – Glazed Aluminum Curtain Walls.
- .5 Section 08 80 50 – Glazing.
- .6 Section 08 87 53 – Security Films.
- .7 Section 09 21 16 – Gypsum Board Assemblies.
- .8 Section 09 22 16 – Non-structural Metal Framing.
- .9 Section 09 91 13 – Exterior Painting.
- .10 Section 09 91 23 – Interior Painting.

1.2 REFERENCES

- .1 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA 609/610-09, Cleaning and Maintenance Guide for Architecturally Finished Aluminum.
- .2 ASTM International
 - .1 ASTM E330-02, 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 CGSB 1.40-97, Anticorrosive Structural Steel Alkyd Primer.
 - .2 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .3 CAN/CGSB-12.20-M89, Structural Design of Glass for Buildings.
- .4 CSA International
 - .1 CSA G40.20/G40.21-F04 (C2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CAN/CSA G164-FM92 (C2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

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.
- .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.
- .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit one 300 x 300 mm corner sample of each type door and frame.
 - .4 Submit sample showing glazing detail, reinforcement, finish and location of manufacturer's nameplates.
 - .5 Frame sample to show glazing stop, door stop, jointing detail, finish, wall trim.
- .5 Manufacturers Reports:
 - .1 Manufacturer's Field Reports: submit manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in Part 3 - FIELD QUALITY CONTROL.

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.

1.5 QUALITY ASSURANCE

- .1 Certifications: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.6 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 coatings that are easy to remove and residue free.
 - .2 Leave protective covering in place until final cleaning of building.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors, 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.
- .4 Packaging Waste Management: remove for reuse[and return by manufacturer of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.7 ACCEPTABLE PRODUCTS AND MATERIALS

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products

Partie 2 Products

2.1 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 E330 under wind load of 1.2 kPa; submit certificate of tests performed.
 - .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.

- .4 Air infiltration: For single acting offset pivot or butt hung entrances in the closed and locked, the test specimen shall be tested in accordance with ASTM E 283 at a pressure differential of 1.567 psf for pairs of doors. A single 915 mm x 2134 mm entrance door and frame shall not exceed 1.0 cfm per square foot.
- .5 For door glazing, refer to Section 08 80 50 – Glazing.

2.2 MATERIALS

- .1 Aluminum extrusions: to Aluminum Association alloy AA6063-T5 anodizing quality.
- .2 Sheet aluminum: to Aluminum Association alloy AA1100- H14 anodizing quality.
- .3 Steel reinforcement: to CSA G40.20/G40.21, grade 300 W.
- .4 Fasteners: aluminum, non-magnetic stainless steel or other corrosion resistant materials, finished to match adjacent material.
- .5 Anchors, fasteners and accessories: aluminum, non-magnetic stainless steel, steel or galvanized steel to ASTM B 633 for SC 3 heavy duty use or other appropriate zinc coating; sufficiently heavy duty to withstand indicated nominal pressure.
- .6 Sliding weatherstrip: provide backed wool pile polypropylene weatherstrip to AAMA 701/702.
- .7 Weatherstrip: plastic backed wool pile.
- .8 Door bumpers: black neoprene.
- .9 Door bottom seal: adjustable] door seal of anodized extruded aluminum frame and vinyl weather seal, recessed in door bottom.
- .10 Isolation coating: alkali resistant epoxy resin solution.
- .11 Glass: tempered glass to CAN/CGSB-12.1, refer to Section 08 80 50 - Glazing.
- .12 Glazing materials: to Section 08 80 50 – Glazing.
- .13 Sealants: colour selected by Departmental Representative in accordance with Section 07 92 00 - Joint Sealants.

2.3 INTERIOR ALUMINUM DOORS

- .1 Construct doors of porthole extrusions with minimum wall thickness of 4 mm, and glass moulding with minimum glass thickness of 1.3 mm.
- .2 Door stiles nominal 108 mm wide plus or minus 6 mm.
- .3 Top rail nominal 108 mm wide plus or minus 6 mm.
- .4 Bottom rail nominal 166 mm wide plus or minus 6 mm.
- .5 Reinforce mechanically-joined corners of doors to produce sturdy door unit.
- .6 Glazing stops: interlocking snap-in type for dry glazing. Exterior stops: tamperproof type.
- .7 Hardware: refer to Section 08 71 00 – Door Hardware.
- .8 Provide adjustable shims to centre glass.

- .9 Glazing sections: clear tempered glass, minimum 6 mm thick. Refer to Section 08 80 50 – Glazing.

2.4 EXTERIOR ALUMINUM DOORS

- .1 Construct doors of porthole extrusions with minimum wall thickness of 4 mm, and glass moulding with minimum glass thickness of 1.3 mm.
- .2 Door stiles nominal 108 mm wide plus or minus 6 mm.
- .3 Top rail nominal 108 mm wide plus or minus 6 mm.
- .4 Bottom rail nominal 166 mm wide plus or minus 6 mm.
- .5 Reinforce mechanically-joined corners of doors to produce sturdy door unit.
- .6 Glazing stops: interlocking snap-in type for dry glazing. Exterior stops: tamperproof type.
- .7 Supply thermally broken doors.
- .8 Insulated glass (25 mm): 6mm with low emission coating on surface No. 2; 12 mm with warm edge spacer bar; and 6mm, refer to Section 08 80 50 – Glazing and Section 08 44 13 – Glazed Aluminum Curtain Walls.
- .9 Extruded elastomeric EPDM or thermoplastic elastomer.
- .10 Hardware: refer to Section 08 71 00 – Door Hardware.
- .11 Provide adjustable shims to centre glass.

2.5 ALUMINUM FRAMES

- .1 Frames: refer to Section 08 44 13 – Glazed Aluminum Curtain Walls.

2.6 ALUMINUM FINISHES

- .1 Appearance and properties of anodized finishes designated by Aluminum Association as Architectural Class 1, Architectural Class 2, and Protective and Decorative.
- .2 Finish for exterior and interior doors and frames identified as **An** in table of doors: satin anodized finish: designation AA-M30C12C30A41, class 1, to AAMA 611.
- .1 Finish for exterior doors and frames identified as **An-P** in table of doors:
 - .1 High-performance organic finish to meet AAMA 2605: thermally cured fluoropolymer system, multiple coats, colour selected by Departmental Representative.
 - .2 Prepare and treat surface prior to application of finish system following manufacturer's instructions for applicator approved by manufacturer.
 - .3 Finish coat must be applied to all exposed surface of both sides of exterior aluminum doors.

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 to be 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.

Partie 3 Execution

3.1 EXAMENINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are 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 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.3 INSTALLATION

- .1 Set frames plumb, square, level at correct elevation in alignment with adjacent work.
- .2 Anchor securely.
- .3 Install doors and hardware in accordance with hardware templates and manufacturer's instructions.
- .4 Adjust door components to ensure smooth operation.
- .5 Make allowances for deflection of structure to ensure that structural loads are not transmitted to frames.
- .6 Glaze aluminum doors and frames in accordance with Section 08 80 50 - Glazing.
- .7 Seal joints to provide weathertight seal at outside and air, vapour seal at inside.

- .8 Apply sealant in accordance with Section 07 92 00 - Joint Sealants. Conceal sealant within the aluminum work except where exposed use is permitted by Departmental Representative.

3.4 FIELD QUALITY CONTROL

- .1 Have manufacturer of products supplied under this Section review Work involved in handling, installation/application, protection and cleaning of its product[s], and submit written reports in acceptable format to verify compliance of Work with Contract.
- .2 Manufacturer's Field Services: provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
- .3 Schedule site visits.
- .1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.
- .2 Twice during progress of Work at 25% and 60% complete.
- .3 Upon completion of Work, after cleaning is carried out.
- .4 Obtain reports within 3 days of review and submit.

3.5 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.

3.6 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