

**Part 1 General**

**1.1 REFERENCES**

- .1 Aluminum Association (AA)
  - .1 AA DAF 45-, Designation System for Aluminum Finishes
- .2 ASTM International
  - .1 ASTM A123/A123M-, Standard Specification for Zinc (Hot-Dip galvanized) Coatings on Iron and Steel Products
  - .2 ASTM E1748-, Standard Test Method for Evaluating the Engagement Between Windows and Insect Screens as an Integral System
- .3 CSA Group
  - .1 AAMA/WDMA/CSA 101/I.S.2/A440-, NAFS - North American Fenestration Standard for Windows, Doors, and Skylights
  - .2 CSA A440S1-, Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440, NAFS - North American Fenestration Standard for Windows, Doors, and Skylights
  - .3 CAN/CSA-A440.4-, Window, Door, and Skylight Installation
  - .4 CAN/CSA-A440.2/A440.3-, Fenestration energy performance/User guide to CSA A440.2, Fenestration energy performance
  - .5 CAN/CSA-Z91-, Health and Safety Code for Suspended Equipment Operations.
  - .6 CAN/CSA-Z809-, Sustainable Forest Management
- .4 Green Seal (GS)
  - .1 GS-11-, Paints and Coatings
- .5 Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual - [current edition]
    - .1 MPI #79, Primer, Alkyd, Anti-Corrosive for Metal
- .6 South Coast Air Quality Management District (SCAQMD)
  - .1 SCAQMD Rule 1113-, Architectural Coatings
  - .2 SCAQMD Rule 1168-, Adhesives and Sealants
- .7 Screen Manufacturers Association (SMA)
  - .1 SMA 1201R- Specification for Insect Screens for Windows, Sliding Doors and Swinging Doors

## 1.2 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 windows and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional Departmental Representative registered or licensed in Province of Quebec.
  - .2 Indicate materials and details in full size scale for head, jamb and sill, profiles of components, interior and exterior trim junction between combination units elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes fasteners, and caulking. Indicate location of manufacturer's nameplates.
- .4 Samples:
  - .1 Submit for review and acceptance of each unit.
  - .2 Samples will be returned for inclusion into work.
  - .3 Submit one representative model of each type window.
  - .4 Include frame, sash, sill, glazing and weatherproofing method, insect screens, surface finish and hardware. Show location of manufacturer's nameplates.
- .5 Test and Evaluation Reports:
  - .1 Submit test reports from approved independent testing laboratories, certifying compliance with specifications.
  - .2 All test reports that reference the NAFS must include, on the first page, a summary of the results including, at minimum:
    - .1 The product manufacturer;
    - .2 The type of product;
    - .3 The model number/series number;
    - .4 The primary product designation;
    - .5 The secondary product designation:
      - .1 Positive design pressure;
      - .2 Negative design pressure;
      - .3 Water penetration resistance test pressure;
      - .4 Canadian air infiltration and exfiltration levels;
    - .6 The test completion date.
  - .3 The report will also contain the following information:
    - .1 Test dates;
    - .2 Report preparation dates;
    - .3 Test information retention period;

- .4 Location of testing facilities;
- .5 Full description of test samples, including:
  - .1 Enamelled finish;
  - .2 Condensation resistance;
  - .3 Safety drop - vertical sliding windows only;
  - .4 Block operation - sliding windows only;
  - .5 Forced entry resistance;
  - .6 Mullian deflection - combination and composite windows.
- .6 Complete description of amendments, as applicable;
- .7 Conclusion;
- .8 If provided, drawings need to be initialled by the test laboratory.

### **1.3 CLOSEOUT SUBMITTALS**

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for windows for incorporation into manual.

### **1.4 QUALITY ASSURANCE**

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

### **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.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Store and protect windows from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **Part 2 Products**

### **2.1 Thermally broken, aluminum framed, operating, horizontal sliding windows glass units and semi-concealed tamperproof fasteners.**

- .1 Materials: aluminum components to CAN/CSA S157. supplemented as follows:
  - .1 All windows by same manufacturer.
- .2 Main Frame: Extruded aluminum: To ASTM B221, 6063 alloy with [T5] [T6] temper.

- .1 Thermal Break: Poured and debridge urethane in both sash and main frame.
- .3 Window Classification: To CAN/CSA A440.
  - .1 Air tightness: A3.
  - .2 Water tightness: B7.
  - .3 Wind load resistance: C5.
  - .4 Condensation resistance: Temperature Index, I 58 minimum.
- .4 Glass: sliding windows
  - .1 Glass Inside frame: clear float glass with a thickness of 6 mm with pyrolytic like hard coating low emissivity to the inner surface;
  - .2 Glass outer frame: clear float glass with a thickness of 6 mm;
  - .3 Size glass to withstand wind loads, dead loads and positive and negative live loads.
  - .4 Limit glass deflection to 1/200 flexural limit of glass with full recovery of glazing materials.

## **2.2 ACCESSORIES**

- .1 Spacer shims silicone, suitable for the method of mounting of the glazing and the weight and dimensions of the windows:
- .2 Screens from the same manufacturer. On the ventilating portion of the windows:
  - .1 Type: aluminum;
  - .2 Insect screening mesh: count 18 x 16;
  - .3 Fasteners: tamper proof;
  - .4 Screen frames: aluminum colour to match window frames.

## **2.3 FABRICATION**

- .1 Fabricate in accordance with AAMA/WDMA/CSA 101/I.S.2/A440 supplemented as follows:
- .2 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.
- .3 Face dimensions detailed are maximum permissible sizes.
- .4 Brace frames to maintain squareness and rigidity during shipment and installation.
- .5 Finish steel clips and reinforcement with shop coat primer.

## **2.4 ANODIC ALUMINUM FINISHES**

- .1 Finish exposed surfaces of aluminum components in accordance with Aluminum Association Designation System for Aluminum Finishes.

- .1 Colour anodic finish: Painted at shop, CHARCOAL color chosen by the Departmental Representative in the range offered by the manufacturer.
- .2 The parts in aluminum must be isolated from the following parts by a protective coating:
  - .1 Parts made of a different metal, except small stainless steel parts, zinc or tin bronze;
  - .2 Concrete elements, mortar and masonry;
  - .3 Wooden elements.

## **2.5 PEINT ALUMINUM FINISHES**

- .1 Finished painted with urethane paint factory applied color selected by Departmental Representative.
- .2 10 year warranty against:
  - .1 Pearl, cracks, fissure , or flaking or significant chalking;
  - .2 Discoloration : max 5 units Delta E;
  - .3 Loss of gloss : max 20%.

## **2.6 GLAZING**

- .1 Glaze windows in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.

## **2.7 HARDWARE**

- .1 Hardware: Choice of the Departmental Representative according to the range offered by the manufacturer.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written instructions.
  - .1 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .2 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 Window installation:
  - .1 Install in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.
  - .2 Arrange components to prevent abrupt variation in colour.
- .2 Sill installation:

- .1 Install metal sills with uniform wash to exterior, level in length, straight in alignment with plumb upstands and faces.
- .2 Maintain 6 to 9 mm space between butt ends of continuous sills. For sills over 1200 mm in length, maintain 3 to 6 mm space at each end.
- .3 Caulking:
  - .1 Seal joints between windows and window sills with sealant. Bed sill expansion joint cover plates and drip deflectors in bedding compound. Caulk between sill upstand and window-frame. Caulk butt joints in continuous sills.
  - .2 Apply sealant in accordance with Section 07 92 00 - Joint Sealants. Conceal sealant within window units except where exposed use is 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 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

### **3.4 PROTECTION**

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

**END OF SECTION**