

SECTION 08 12 16  
ALUMINUM FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Interior aluminum frames for doors installed in gypsum board partitions.
2. Interior aluminum frames for glazing installed in gypsum board partitions.
3. Fire rated interior aluminum frames for doors installed in gypsum board partitions.

B. The following maximum width sizes apply to the scope of this Section; units above the sizes indicated shall be governed by Section 08 41 13 Aluminum Framed Entrances and Storefronts:

1. Interior aluminum frames for doors installed in gypsum board partitions: 3 feet 6 inches wide.
2. Interior aluminum frames for glazing installed in gypsum board partitions: 3 feet 6 inches wide.
3. Fire rated interior aluminum frames for doors installed in gypsum board partitions: 3 feet 6 inches wide.

1.2 ACTION SUBMITTALS

A. Product Data: Technical data including construction details, material descriptions, dimensions of individual components and profiles, fire resistance rating, and finishes.

B. Shop Drawings: Submit elevations, sections, and installation details for each wall opening condition.

1. Include details for each frame type, including dimensioned profiles and metal thicknesses.
2. Include locations of reinforcements and preparations for hardware.
3. Include details of anchorages, joints, field splices, connections, and accessories.
4. Include details of moldings, removable stops, and glazing.
5. Coordinate shop drawings and required glazing thicknesses with the Performance Requirements of Section 08 80 00 Glazing. Glazing thickness shall be sized to suit all applications.

C. Samples: Upon request of Architect, submit samples.

1. Framing Member and Finish: 12 inches (300 mm) long. Include trim.
2. Corner Fabrication and Finish: 12 inch by 12 inch (300 mm by 300 mm) long, full size window corner, including full size sections of extrusions with factory applied color finish.

3. Door Finish: Unit not less than 3 inches (75 mm) square.

### 1.3 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Submit data for aluminum frames to include in maintenance manuals.

### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain aluminum frames and frame manufacturer's doors from single source from single manufacturer.
- B. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and to set quality standards for fabrication and installation.
  1. Build mockup of each type of aluminum frame and door in typical wall area as shown on Drawings.
  2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Preinstallation Conference: Conduct conference at site.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Fire Rated Frames: Frames for fire rated door assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C as acceptable to the Local Authority Having Jurisdiction.
  1. Oversize Fire Rated Frames: For units exceeding sizes of tested assemblies, provide certification by a qualified testing agency that frames comply with standard construction requirements for tested and labeled fire rated frames except for size.
  2. Frames for Smoke and Draft Control Assemblies: Tested according to UL 1784 and installed in compliance with NFPA 105.
    - a. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (0.9 cu. m per minute/sq. m) at the tested pressure differential of 0.3-inch wg (75 Pa).
- B. Glazing thicknesses shall be confirmed via the delegated design requirements of Section 08 80 00 Glazing for deflection and loading against breakage. Confirmation shall be provided in the Submittals for the Work of this Section.
- C. Structural Loads:
  1. Deflection Limits: Deflection normal to glazing plane is limited to 1/175 of clear span or 3/4 inch, whichever is smaller.

2. Interior Glazing: Differential deflection of two adjacent unsupported edges not be greater than the thickness of the panels when a force of 50 lbs per linear foot is applied horizontally to one panel, at any point up to 42 inches above the adjacent walking surfaces.

## 2.2 MATERIALS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Advanced Architectural Frames.
  2. Alpha Aluminum Products, Inc.
  3. Custom Components Company.
  4. Dual Lock Partition Systems, Inc.; Avalon International Aluminum.
  5. Modulex Products, Inc.
  6. Versatrac Frames; a division of American Door Products Inc.
  7. Western Integrated Materials, Inc.
  8. Wilson Partitions; a division of Acradia, Inc.
- B. Aluminum Framing: ASTM B 221 (ASTM B 221M), with alloy and temper required to suit structural and finish requirements, and not less than 0.062 inch (1.6 mm) thick.
- C. Door Frames: Extruded aluminum, reinforced for hinges, strikes, and closers.
- D. Frame Reinforcement:
  1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
  2. Cold Rolled Sheet and Strip: ASTM A 1008/A 1008M.
  3. Hot Rolled Sheet and Strip: ASTM A 1011/A 1011M.
  4. Primer: Zinc rich, corrosion resistant primer.
- E. Glazing Frames: Extruded aluminum, for glass thickness indicated.
- F. Door Tracks: Extruded aluminum where exposed, sized to enclose sliding door hardware, and in finish matching frame and trim finish.
- G. Trim: Extruded aluminum, not less than 0.062 inch (1.6 mm) thick; removable, snap in casing trim glazing stops and door stops, without exposed fasteners.
- H. Doors: Factory assembled, 1-3/4 inch (45 mm) thick, aluminum framed door construction.
  1. Door Operation: Swinging.
  2. Stiles: As indicated on the Drawings..
  3. Rails: As indicated on the Drawings.
- I. Door Finish: Clear anodized aluminum **Factory applied, baked enamel or powder coat finish**.
  1. Color: Selected by Architect.

- J. Frame and Trim Finish: Clear anodized aluminum **Factory applied, baked enamel or powder coat finish.**
  - 1. Color: Selected by Architect.
- K. Fasteners: Aluminum, nonmagnetic, stainless steel or other noncorrosive metal fasteners compatible with frames, stops, panels, reinforcement plates, hardware, anchors, and other items being fastened.
- L. Door Silencers: Continuous mohair, wool pile, or vinyl seals in black color.
- M. Smoke Seals: Intumescent strip or fire rated gaskets in black.
- N. Glazing Gaskets: Extruded or molded rubber or plastic, to accommodate glazing thickness indicated; in black.
- O. Butt-Glazing Sealants:
  - 1. Single-Component, Nonsag, Acid-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Uses NT, G, and A.
    - a. Products: Subject to compliance with requirements, provide one of the following:
      - 1) Dow Corning Corporation; 999-A.
      - 2) GE Construction Sealants; Momentive Performance Materials Inc.; Construction SCS1200 or Contractors SCS1000.
      - 3) Pecora Corporation; 860.
      - 4) Tremco Incorporated; Proglaze or Tremsil 200.
    - b. Sealants used inside the weatherproofing system shall have a VOC content of 250 g/L.
- P. Glass: Refer to Section 08 80 00. Glazing thickness shall be sized to suit all applications in accordance with the Performance Requirements of Section 08 80 00 Delegated Design.
  - 1. Minimum glazing thickness for panels under 1,500 square inches shall be 4 mm.
  - 2. Minimum glazing thickness for panels over 1,500 square inches shall be 8 mm.
  - 3. Glass thickness shall be increased based on delegated design calculations against antifracture and deflection.
- Q. Door Hardware: Refer to Section 08 71 00.

## 2.3 FABRICATION

- A. Maintain continuity of line and accurate relation of planes and angles. Provide secure attachment and support at mechanical joints with hairline fit of contacting members.
- B. Fabricate aluminum frames to allow for clearances and shim spacing around perimeter of assemblies to enable installation.
- C. Provide concealed corner reinforcements and alignment clips for accurately fitted hairline joints at butted and mitered connections.

- D. Factory prepare aluminum frames to receive templated mortised hardware; include cutouts, reinforcements, mortising, drilling, and tapping, according to the Door Hardware Schedule and templates furnished as specified in Section 08 71 00.
  - 1. Locate hardware cutouts and reinforcements as required by fire rated label for assembly.
- E. Hardware Reinforcement: Factory prepare aluminum frames to receive template mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates. Comply with requirements of Section 08 71 00.
  - 1. Reinforce frames to receive surface mounted door hardware. Machine jambs and prepare for hardware, with concealed reinforcement plates, drilled and tapped as required and fastened within frame with concealed screws.
  - 2. Locate hardware as indicated.
  - 3. Coordinate locations of conduit, wiring boxes, and power transfers for electrical connections.
- F. Fabricate frames for glazing with removable stops to allow glazing replacement without dismantling frame.
  - 1. Locate removable stops on the inside of spaces accessed by keyed doors.
- G. Fabricate components to allow secure installation without exposed fasteners.

## 2.4 FINISH REQUIREMENTS

- A. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- B. Aluminum Finishes: As indicated on the Drawings:
  - 1. Clear Anodic Finish: AAMA 611, AA-M12C22A31, Class II, 0.010 mm or thicker.
  - 2. Baked Enamel or Powder Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.
  - 3. Field painted frames and finishes are prohibited.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the work.
- B. Verify wall thickness does not exceed standard tolerances allowed by throat size of indicated aluminum frame.
- C. Proceed with installation after correcting unsatisfactory conditions.

### 3.2 INSTALLATION

- A. Install aluminum frames plumb, rigid, properly aligned, and securely fastened in place; according to manufacturer's written instructions.
  - 1. At fire protection rated openings, install fire rated frames according to NFPA 80 and NFPA 105.
- B. Install frame components in one piece sections. For larger units utilize the longest possible lengths with no piece less than 48 inches (1220 mm); components 96 inches (2450 mm) or shorter shall be one piece.
  - 1. Fasten to suspended ceiling grid on maximum 48 inch (1220 mm) centers, using sheet metal screws or other fasteners approved by frame manufacturer.
  - 2. Use concealed installation clips to produce tightly fitted and aligned splices and connections.
  - 3. Secure clips to extruded main frame components and not to snap in or trim members.
  - 4. Do not leave screws or other fasteners exposed to view when installation is complete.
- C. Glass: Install glass according to Section 08 80 00 aluminum frame manufacturer's written instructions.
- D. Doors: Install doors level, plumb, square, true to line, without distortion, without warp or rack of frames and panels; anchored securely in place to structural support; and in proper relation to adjacent construction.
  - 1. Sliding Doors: Set sill members in bed of sealant or with gaskets.
  - 2. Install doors aligned with frames and fitted with required hardware.
- E. Door Hardware: Install according to Section 08 71 00 and aluminum frame manufacturer's written instructions.
- F. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

### 3.3 ADJUSTING

- A. Inspect installation, correct misalignments, and tighten loose connections.
- B. Doors: Adjust doors to operate smoothly and easily, without binding or warping. Adjust hardware to function smoothly, and lubricate as recommended by manufacturer.
- C. Clean exposed frame surfaces promptly after installation, using cleaning methods recommended in writing by frame manufacturer and according to AAMA 609 and 610.
- D. Touch Up: Repair marred frame surfaces to blend inconspicuously with adjacent unrepaired surface as viewed by Architect. Remove and replace frames with damaged finish that cannot be satisfactorily repaired.

END OF SECTION