

## SECTION 081216

# ALUMINUM DOOR FRAMES

### PART 1 GENERAL 1.01 SUMMARY

- A. Section Includes:
  - 1. Aluminum door frames
  - 2. Aluminum borrowed lite frames
- B. Related Sections:
  - 1. Section 06100 Rough Carpentry
  - 2. Section 08210 Wood Doors
  - 3. Section 08700 Hardware
  - 4. Section 08800 Glazing
  - 5. Section 09250 Gypsum Board

### 1.2 REFERENCES

- A. Publications listed herein are part of this specification to the extent referenced.
- B. American Architectural Manufacturers Association:
  - 1. AAMA 605.2 Voluntary Specification for High-Performance Organic Coatings
- C. American Society for Testing and Materials:
  - 1. ASTM B221 Specification for Aluminum-Alloy Extruded Bars, Wire, Shapes and Tubes
- D. Aluminum Association:
  - 1. AA ASD-1 Aluminum Standards and Data
- E. National Fire Protection Association:
  - 1. NFPA 80 Standard for Fire Doors and Windows
  - 2. NFPA 101 Life Safety Code
- F. Underwriters Laboratory, Inc.
  - 1. UL Standard 10(b) Fire Tests of Door Assemblies
  - 2. UL Standard 63 Fire Door Frames
  - 3. UL Building Materials Directory

### 1.3 SUBMITTALS

- A. Product Data:
  - 1. Submit manufacturer's literature describing products to be provided.
- B. Shop Drawings:
  - 1. Submit shop drawings showing elevation of frames, profile, design construction details, methods of assembling sections, hardware locations, dimensions, anchorage and fastening methods, wall opening construction and finish requirements. Indicate location of each frame in Project.
    - a. Indicate location of each frame in Project.
    - b. Cross reference to Schedules.
- C. Samples:
  - 1. Submit four samples of frames showing selected finishes, corner joint, hinge reinforcement and anchors.

## 1.4 QUALITY ASSURANCE

- A. Installer Qualifications:
  - 1. Engage experienced Installer who has completed installations of aluminum frames similar in design and extent to those required for project and whose work has resulted in construction with record of successful in-service performance.
- B. Manufacturer's Qualifications:
  - 1. Provide aluminum framing systems produced by firm experienced in manufacturing systems that are similar to those indicated for this project and that have record of successful in-service performance.
- C. Single Source Responsibility:
  - 1. Obtain aluminum framing systems from one source and from single manufacturer.
- D. Design Criteria:
  - 1. Drawings indicate the size, profile and dimensional requirements of aluminum frames required and are based on specific types and models indicated.
  - 2. 60/90 minute rated frames shall be aluminum clad Phoenix Series. Hollow metal not permitted.
  - 3. Acoustical Frames Shall Be Eagle Tacitus Series
- E. Regulatory Requirements:
  - 1. Installed frame and door assembly shall conform to NFPA 80 for fire rated class indicated.
  - 2. Where doors are noted with an hourly fire resistance rating, provide door and frame assemblies labeled by Underwriter's Laboratory, or any other testing laboratory approved by the local code authorities, to meet the hourly fire rating noted. Assemblies shall meet SBC requirements for positive pressure.
  - 3. Where an aluminum metal frame is used as a glazed opening in an interior fire rated wall assembly, the frame shall be labeled to match the fire rating required for a door assembly in the fire rated wall, except in a 1 hour fire rated corridor wall assembly, the glazed frame shall be labeled to a 45 minute rating. In a 1 hour fire rated corridor wall assembly, where the door frame is integral with the glazed frame, the frame shall have a 45 minute rating.

## 1.5 DELIVERY, STORAGE AND HANDLING

- A. Packing, Shipping, Handling and Unloading:
  - 1. Deliver materials in original unopened packaging with labels intact.
  - 2. Handle frames in a manner to prevent damage to finishes.

## PART 2 PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS

- A. Aluminum Frames:
  - 1. Avalon International Aluminum, LLC, (800-678-0566) (FKA Dual Lock Partition Systems/Alumax)  
Email: [info@avalonint.com](mailto:info@avalonint.com). Web: [www.avalonint.com](http://www.avalonint.com)
  - 2. Substitutions: C.R. Lawrence and Cline
  - 3. Requests for substitutions will be considered in accordance with provisions of Section 01600.

### 2.2 MATERIALS

- A. Aluminum Frames: Extruded aluminum
  - 1. Standard alloys shall conform to requirements published in AA ASD-1 and ASTM B221; 6063 T5 alloy.
  - 2. Thickness: 0.062" minimum
  - 3. Finish: Thermal-setting powder coating / Class II clear anodized
  - 4. Products: Avalon - Eagle and Phoenix Series (FKA Dual Lock/Alumax)
  - 5. Flush 1 1/2" or 2" casing; extended lip strike not permitted.
  - 6. Throats of frames to be nominal wall thickness plus a 1/8".

- B. Fire Rated Frames:
  1. Labeled frames shall be provided for those openings requiring a 20/45/60/90 minute fire protection rating as indicated on Drawings.
  2. Frames shall be constructed as tested and approved by Warnock Hersey Laboratories. Other nationally recognized testing agency having a periodical factory inspection service may be used subject to approval of authority having jurisdiction.
  3. Should any frame indicated to be fire rated not qualify for appropriate labeling because of its design, hardware, or any other reason, notify Architect before fabrication work on that frame is started.
- C. Thermal-Setting Powder Coatings:
  1. Coating material shall contain a formulation of hybrid epoxy-polyester.
  2. Manufacturer's standard colors.
  3. Custom color to match control sample provided by Architect.
- D. Class II Clear Anodized
- E. Glass and Glazing Materials: Comply with requirements of "Glazing" sections of these specifications.
- F. Fasteners: Provide fasteners of aluminum, non-magnetic stainless steel, zinc plated steel, or other material warranted by the manufacturer to be non-corrosive and compatible with aluminum components, hardware, anchors and other components.
  1. Reinforcement: Where fasteners screw-anchor into aluminum members less than 0.125 inches thick, reinforce interior with aluminum or non-magnetic stainless steel to receive screw threads, or provide standard non-corrosive pressed-in splined grommet nuts.
  2. Exposed Fasteners: Do not use exposed fasteners except for application of hardware. For application of hardware, use Phillips flat-head machine screws that match the finish of member or hardware being fastened.

## 2.3 FABRICATION

- A. Frames:
  1. Frames shall be knock-down units consisting of separate header, strike and hinge jambs with snap-on casing, fabricated to sizes indicated on Drawings.
  2. Thickness of main frame members shall be increased to 0.130" minimum at frame and hinge anchorage. Hinge backers shall be 3/8" solid aluminum.
  3. Frames shall be supplied with a notch at top of jamb and corner brackets to provide for correct alignment with header and add strength to joint.
  4. Stops shall be provided with a continuous nylon backed wool pile sound and light seal around perimeter.
  5. Finished work shall be strong and rigid, neat in appearance, square, true and free of defects, warp, or buckle. Members shall be clean cut, straight and of uniform profile throughout their lengths.
  6. Frames shall be pressure fit type that are installed after partition is in place. Frames shall be anchored at bottom of each jamb. Additional anchors shall be furnished per manufacturer's recommendations.
  7. Glazing frames shall be provided with snap-in type stops with manufacturer's standard neoprene gaskets. Glass installed adjacent to metal without intervening gasket shall not be allowed. Door jambs with integral glazing shall have reinforcement channel. Intermediate mullions shall maintain 1-1/2" profile.
  8. Continuity: Maintain accurate relation of planes and angles with hairline fit of contacting members.
  9. Uniformity of Metal Finish: Abutting extruded aluminum members shall not have an integral color or texture variation greater than half the range indicated in the sample per submittal.
  10. Fasteners: Exposed fasteners not permitted.

## 2.4 FINISHES

- A. Shop Applied Finish:
  - 1. Remove die markings prior to finishing operations. Perform this work in addition to finish specified. Scratches, abrasions, dents and similar defects are not acceptable.
- B. **Thermal-Setting Powder Coatings:**
  - 1. Aluminum frames shall have shop applied finish with a thermal-setting powder coating applied in compliance with AAMA 605.2. Finish system shall have a minimum dry film thickness of 1.8 mil applied over a seven stage aluminum pre-treatment.
- C. Clear anodic coating:
  - 2. Comply with AAMA 607.1. 1. Class 2, AAM12C22A31 clear anodized coating, 0.4-.07 mill thickness minimum.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Frames:
  - 1. Prior to installation rough openings shall be checked and corrected for size, squareness, alignment and plumbness.
  - 2. Slip header and jambs into rough opening, allowing header to rest on jambs. Align to scheduled opening width and height, achieving equal wall capture at both jambs.
  - 3. Check level of header and squareness and plumb of jambs. Measure width at each hinge location.
  - 4. Attach flat corner angles at faces of head. Anchor jambs and header in legs of frame at top and bottom of jambs and at approximately 15" on center.
  - 5. Install mitered trims by snapping over receiver tabs and lightly tapping with a rubber mallet.
- B. Tolerances:
  - 1. Squareness:  $\pm 1/16''$ 
    - a. Measured on a line 90° from one jamb, at upper corner of frame at other jamb.
  - 2. Alignment:  $\pm 1/16''$ 
    - a. Measured on jambs on a horizontal line parallel to plane of wall.
  - 3. Twist:  $\pm 1/16''$ 
    - a. Measured at face corners of jambs on parallel line.
  - 4. Plumbness:  $\pm 1/16''$ 
    - a. Measured on the jamb at floor.

### 3.2 ADJUSTING

- A. Final Adjustments:
  - 1. Check and re-adjust operating finish hardware just prior to final inspection and after painting hinges.
  - 2. Remove and replace defective work.

### 3.3 CLEANING

- A. Clean the completed system, inside and out, promptly after installation, exercising care to avoid damage to coatings.
- B. Clean glass surfaces after installation complying with requirements contained in the "Glazing" Sections for cleaning and maintenance. Remove excess glazing and sealant compounds, dirt and other substances from aluminum surfaces.
- C. Door opening assemblies shall be cleaned with general, non-abrasive cleaners suitable for painted surfaces. Wipe the surfaces with a soft, dry cloth per AAMA 609 & 610.

### **3.4 PROTECTION**

- A. Institute protective measures required throughout remainder of construction period to ensure that aluminum frames will be without damage or deterioration, other than normal wear at time of acceptance.

**END OF SECTION**