

## SECTION 08120

### ALUMINUM DOORS AND FRAMES

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Flush aluminum doors.
- B. Aluminum panels.
- C. Aluminum door frames.

##### 1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry (hardware installation).
- B. Section 04200 - Masonry (frame installation).
- C. Section 07900 - Joint Sealers.
- D. Section 08710 - Door Hardware.
- E. Section 08800 - Glazing.
- F. Section 09900 - Field Painting.

##### 1.3 REFERENCES

- A. Aluminum Association, Inc. (AA).
  - 1. AA 5005-H14 - Sheet Architectural.
  - 2. AA 6061-T6 - Heavy Duty Structures.
  - 3. AA 6063-T5 - Extrusions, Pipe, Architectural.
  - 4. AA DAF-45 - Designation System for Aluminum Finishes.
- B. American Architectural Manufacturers Association (AAMA).
  - 1. AAMA 603.8 - Pigmented Organic Coating (Polycron).
  - 2. AAMA 605.2 - High Performance Organic Coating (Kynar).
  - 3. AAMA 609 - Anodized Cleaning and Maintenance.
  - 4. AAMA 610.1 - Painted Extrusion Cleaning and Maintenance.
  - 5. AAMA 611 - Anodized Aluminum Standards.
  - 6. AAMA 701 - Pile Weatherstrip.
- C. American Society for Testing and Materials (ASTM).

1. A 123 - Zinc Coating, Iron and Steel Products.
2. C 591 - Insulation Board, Thermal (Urethane).
3. C 728 - Insulation Board, Mineral Aggregate.

#### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's descriptive literature for each type door and frame; include the following information:
  1. Fabrication methods.
  2. Finishing.
  3. Hardware preparation.
  4. Accessories.
- C. Shop Drawings: Indicate the following:
  1. Elevations and details of each door and frame type.
  2. Schedule of doors and frames.
  3. Conditions at openings with various wall thicknesses and materials.
  4. Location and installation requirements for hardware.
  5. Thicknesses of materials, joints.
  7. Connections and trim.
- D. Samples: Two sets of color chips representing specified colors and finishes.
- E. Verification Samples:
  1. Submit samples of each type, consisting of aluminum door corner construction, minimum 6 inch by 6 inch (150 x 150 mm) legs.
  2. Where color or texture variations are anticipated, such as anodized finishes, include 2 or more units in each set of samples indicating extreme limits of variations.
- F. Hardware Templates: For use in correctly aligning and adequately reinforcing door hardware.
- G. Manufacturer's Installation Instructions: Printed installation instructions for each product, including product storage requirements.
- H. Operations and Maintenance Data: Printed instructions for each product.

## 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing aluminum door and frame systems of the type required for this project, with minimum five continuous years documented experience.
- B. Installer's Qualifications: Workmen skilled in handling aluminum door and frame systems of the type required for this project.

## 1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver doors and frames palleted, wrapped, or crated. Individually wrap doors in resilient packaging of corrugated cardboard, nylon banded.
- B. Inspect delivered doors and frames for damage; unload and store with minimum handling. Repair minor damage if refinished items are equal in all respects to new work; otherwise, remove damaged items and replace with new.
- C. Store products of this section under cover in manufacturer's unopened packaging until installation.
  - 1. Place units on minimum 4 inch (100 mm) wood blocking.
  - 2. Avoid non-vented plastic or canvas covers.
  - 3. Remove packaging immediately if packaging becomes wet.
  - 4. Provide 1/4 inch (6 mm) air spaces between stacked doors.

## 1.7 PROJECT CONDITIONS

- A. Field Measurements: Take field measurements of areas to receive aluminum frames; note discrepancies on submitted shop drawings.

## 1.8 SCHEDULING

- A. Ensure that templates required for reinforcement for door hardware specified in Section 08710, and/or actual hardware requested by manufacturer, are available in time for fabrication without affecting construction progress schedule.

## 1.9 WARRANTY

- A. Manufacturer: Five-year warranty against defects in workmanship and materials, including warping, rotting, decaying, or bowing.
- B. Installer: Warrant installation procedures and performance for five years against defects due to workmanship and materials handling.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Cline Aluminum Doors, Inc., 112 - 32nd Avenue West, Bradenton, FL 34205-8907; ASD. Tel: (800) 648-6736, Fax: (941) 746-5153.
- B. Requests for substitution will be considered in accordance with provisions of Section 01600.
- C. Substitutions: Not permitted.

### 2.2 COMPONENTS

- A. Aluminum Members: Alloy and temper recommended by manufacturer for strength, corrosion resistance, and application of required finish.
- B. Flush Aluminum Doors:
  - 1. Door Construction:
    - a. Extrusion Wall Thickness: 0.125 inch (3.17 mm) minimum, except beads and trim.
    - b. Beads and Trim Wall Thickness: 0.050 inch (1.25 mm) minimum.
    - c. Facing: One-piece, smooth 0.040 inch (1 mm) 5005-H14 stretcher leveled aluminum alloy laminated to 0.125 inch (3 mm) tempered hardboard.
    - d. Facing: One-piece, 0.040 inch (1 mm) 5005-H14 aluminum alloy, vertically-ribbed embossed pattern, laminated to 0.125 inch (3 mm) tempered hardboard.
    - e. Facing: One-piece, smooth 0.090 inch (2.2 mm) 5005-H14 stretcher leveled aluminum alloy laminated to 0.075 inch (1.9 mm) oil-tempered hardboard.

- f. Core: Honeycomb material, 80 lbs. per 3,000 sq. ft. (0.13 kg/sq. m) ream, 20 percent phenolic resin, 7/16 inch (11 mm) cell size.
- g. Core: ISO-25 polyisocyanurate closed-cell foam, 1.9 lbs. per cubic ft. (30.4 kg/cub. m) density.
- h. Door Perimeter: 6063-T5 extruded aluminum alloy with special beveled edge design to receive facings.
- i. Internal Hardware Backup: Full perimeter aluminum tube, 4-1/4 inches (108 mm) wide, 0.125 inch (3 mm) minimum wall thickness.
- j. Oil-tempered Hardboard: Full width of doors.
- k. Replaceable Weatherstripping: AAMA 701, woolpile with nylon fabric, polypropylene backing, entire perimeter of doors.
- l. Materials and Bonding Agents: Meet EPA requirements.
- m. Monorail Provisions: Cutout for monorail beams and any electrical tracks.

2. Glazing:

- a. Glass: 1/4 inch (6 mm) tempered.
- b. Glass: 1 inch (25 mm) insulating, tempered.
- c. Stops: Snap-in, non-removable type, 6063-T5 extruded aluminum alloy, 0.050 inch (1.25 mm) minimum thickness.
- d. Exposed Fasteners: Countersunk stainless steel Phillips head screws.
- e. Seals: Vinyl inserts.

3. Door Louvers:

- a. Blades and Frames: 6063-T5 extruded aluminum alloy, 0.062 inch (1.57 mm) minimum thickness.
- b. Exposed Fasteners: Stainless steel.
- c. Insect Screens: 14-18 mesh, 0.011 inch (0.28 mm) diameter alclad aluminum, set in 6063-T5 extruded aluminum alloy frame, 0.050 inch (1.25 mm) minimum thickness.

C. Aluminum Frames:

- 1. Frame Components: Extruded channel (tubular) 6063-T5 aluminum alloy, minimum wall thickness 0.125 inch (3.0 mm); cut corners square and fasten together with extruded corner brackets and stainless steel screws.

2. Hinge and Strike Mounting Plates: Extruded aluminum alloy bar stock, 0.1875 inch (4.75 mm) thick.
3. Replaceable Weatherstripping: AAMA 701, woolpile with nylon fabric, polypropylene backing, at head and jambs.
4. Profile: Open Back with Fin (OBF) 1/3/4 inches by 4 inches (44 x 100 mm).
5. Profile: Open Back with Fin (OBF) 1/3/4 inches by 5 inches (44 x 125 mm).
6. Profile: Open Back with Applied Stop (OBS) 1/3/4 inches by 4 inches (44 x 100 mm).
7. Profile: Open Back with Applied Stop (OBS) 1/3/4 inches by 5 inches (44 x 125 mm).
8. Profile: Open Back with Applied Stop (OBS) 1/3/4 inches by 6 inches (44 x 150 mm).
9. Profile: \_\_\_\_\_.

- D. Subframes: Constructed of 6063-T5 extruded aluminum alloy, 0.090 inch (2.29 mm) typical wall thickness, width to receive framing with 3/4 inch (19 mm) slip adjustment.

### 2.3 FINISHES

- A. Finish: Specified in SCHEDULES Article of PART 3 of this section.
- B. Finish: Black anodic coating; AA-M12C22A42 Class II mechanical finish, non-specular as fabricated, with medium-matte chemical etch, minimum thickness 0.4 mil (0.010 mm).
- C. Finish: Dark Bronze anodic coating; AA-M12C22A42 Class II mechanical finish, non-specular as fabricated, with medium-matte chemical etch, minimum thickness 0.4 mil (0.010 mm).
- D. Finish: Medium Bronze anodic coating; AA-M12C22A42 Class II mechanical finish, non-specular as fabricated, with medium-matte chemical etch, minimum thickness 0.4 mil (0.010 mm).
- E. Finish: Light Bronze anodic coating; AA-M12C22A42 Class II mechanical finish, non-specular as fabricated, with medium-matte chemical etch, minimum thickness 0.4 mil (0.010 mm).

- F. Finish: Clear anodic coating; AA-M12C22A31 Class II mechanical finish, non-specular, with chemical medium-matte etch, minimum thickness 0.4 mil (0.010 mm).
- G. Finish: Pigmented Organic Coating: Polycron (AAMA 603.8).
  - 1. Color: Selected by Architect from manufacturer's full range of available colors.
  - 2. Color: Custom color matching Architect's sample.
  - 3. Color: \_\_\_\_\_.
- H. Finish: High Performance Organic Coating: Kynar/Polyvinylidene (PVDF) (AAMA 605.2).
  - 1. Color: Selected by Architect from manufacturer's full range of available colors.
  - 2. Color: Custom color matching Architect's sample.
  - 3. Color: \_\_\_\_\_.

#### 2.4 FABRICATION

- A. General: Receive hardware if required by manufacturer to reinforce doors and frames for hardware to be used.
- B. Aluminum Doors and Panels: Of type, size, and design indicated.
  - 1. Minimum Thickness: 1-3/4 inches (44 mm), 5-ply.
  - 2. Door sizes shown are nominal; provide standard clearances as follows:
    - a. Hinge and Lock Stiles: 0.125 inch (3.17 mm).
    - b. Between Meeting Stiles: 0.250 inch (6.34 mm).
    - c. At Top Rails: 0.125 inch (3.17 mm).
    - d. Between Door Bottom and Threshold: 0.125 inch (3.17 mm).
- C. Aluminum Frames: Of shapes and contours indicated.
  - 1. Mill joints to hairline fit.
  - 2. Reinforce and secure mechanically.
  - 3. Exposed Fasteners: Countersunk stainless steel Phillips head screws.

#### 2.5 ACCESSORIES

- A. Fasteners: Aluminum, non-magnetic stainless steel, or other material warranted by manufacturer as non-corrosive and compatible with aluminum components.

1. Do not use exposed fasteners except where unavoidable.
- B. Brackets and Reinforcements: Manufacturer's high-strength aluminum units where feasible, otherwise, non-magnetic stainless steel or hot-dip galvanized steel complying with ASTM A 123.
- C. Bituminous Coating: Cold-applied asphaltic mastic, compounded for 30-mil (0.76 mm) thickness per coat.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that wall surfaces and openings are ready to receive frames and are within tolerances specified in manufacturer's instructions.
- B. Verify that frames installed by other trades for installation of doors of this section are in strict accordance with recommendations and approved shop drawings and within tolerances specified in manufacturer's instructions.

### 3.2 PREPARATION

- A. Perform cutting, fitting, forming, drilling, and grinding of frames as required for project conditions; do not damage sight-exposed finishes.
- B. Separate dissimilar metals to prevent electrolytic action between metals.

### 3.3 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and approved shop drawings; set frames plumb, square, level, and aligned to receive doors.
- B. Anchor frames to adjacent construction in strict accordance with recommendations and approved shop drawings and within tolerances specified in manufacturer's instructions.



1. Seal metal-to-metal joints between framing members using good quality elastomeric sealant.
- C. Where aluminum surfaces contact metals other than stainless steel, zinc, or small areas of white bronze, protect from direct contact by one or more of the following methods:
1. Paint dissimilar metal with one coat of heavy-bodied bituminous paint.
  2. Apply good quality elastomeric sealant between aluminum and dissimilar metal.
  3. Paint dissimilar metal with one coat of primer and one coat of paint recommended for aluminum surface applications.
  4. Use nonabsorptive tape or gasket in permanently dry locations.
- D. Hang doors with required clearances as follows:
1. Hinge and Lock Stiles: 0.125 inch (3.17 mm).
  2. Between Meeting Stiles: 0.250 inch (6.34 mm).
  3. At Top Rails: 0.125 inch (3.17 mm).
  4. Between Door Bottom and Threshold: 0.125 inch (3.17 mm).
- E. Adjust doors and hardware to operate properly.
- F. Install glazing in glazing frames; set glazing stops and glazing gaskets flush with frame.
- G. Install hardware for doors of this section.
- H. Installation of door hardware is specified in Section 08710.
- I. Installation of glass is specified in Section 08800.

### 3.4 CLEANING

- A. Upon completion of installation, thoroughly clean door and frame surfaces in accordance with AAMA 609.
- B. Do not use abrasive, caustic, or acid cleaning agents.

### 3.5 PROTECTION

- A. Protect products of this section from damage caused by subsequent construction until substantial completion.

- B. Repair damaged or defective products to original specified condition in accordance with manufacturer's recommendations.
- C. Replace damaged or defective products which cannot be repaired to Architect's acceptance.

### 3.6 SCHEDULES

- A. Location: Accounting.
  - 1. Finish: Clear anodic coating; AA-M12C22A41 Class II mechanical finish, non-specular, with chemical medium-matte etch, minimum thickness 0.4 mil (0.010 mm).
- B. Location: Conference.
  - 1. Finish:
    - a. Pigmented Organic Coating: Polycron (AAMA 603.8).
    - b. Color: Custom color matching Architect's sample.

END OF SECTION