

SECTION 08300
AUTOMATIC CLEANROOM DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY:

- A. Section Includes:
 - 1. Furnish and install of a complete Automatic Cleanroom Sliding Door with Electronic Operator.
- B. Work not included in this Section:
 - 1. Electrical from disconnect to panel.
 - 2. Preparation of opening.
 - 3. Preparation of floor.

1.3 REFERENCES/PROJECT REQUIREMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Requirements of the following Project Specification Sections apply to this section:
 - 1. Section 01110 – Cleanroom Construction Protocol
 - 2. Section 01111 – Cleanroom Construction and Cleaning Procedures
 - 3. Section 01112 – Cleanroom Certification and Acceptance
 - 4. Section 08800 – Glazing
 - 5. Section 13036 – Cleanroom Wall Systems
- C. Additional Project Requirements:
 - 1. ANSI Z97.1 - Safety Glazing Materials used in Buildings – Methods of Test
 - 2. ANSI/BHMA A156.10, Power Operated Pedestrian Doors.
 - 3. ASTM B221 – Aluminum-Alloy Extruded Bars, Rods, Shapes and Tubes.
 - 4. UL 325 - Electric Door, Drapery, Gate, Louver and Window Operators and Systems.
 - 5. NFPA 101, as specified in this Section

1.4 DEFINITIONS:

- A. NAAMM – National Association of Architectural Metal Manufacturers.
- B. ANSI – American National Standard Institute.
- C. ASTM – American Society of Testing and Materials.
- D. NFPA – National Fire Protection Association.
- E. UL – Underwriters Laboratories Inc.

1.5 SUBMITTALS:

- A. General: Submit in accordance with Division 1.
- B. Product Data: Submit manufacturer's product data and standard details for automatic entrance doors, including fabrication, finishing, hardware, operators, accessories and other components of the work. Include punching-in diagrams, wiring diagrams, parts lists, and maintenance instructions, as well as certified test data, where required.
- C. Shop Drawings: Submit shop drawings for the fabrication and installation of automatic entrance doors and associated components of the work. Indicate anchors, joint system, expansion provisions, hardware, and other components not included in manufacturers standard data. Include glazing details.
- D. Closeout submittals
 - 1. Operation and Maintenance Data: Submit manufacturer's printed, recommended operation and maintenance data.
 - 2. Warranty: Submit specified product warranty in accordance with Division 1.

1.6 QUALITY ASSURANCE

- A. BHMA Standard: Provide automatic entrance doors complying with applicable requirements of ANSI/BHMA A156.10, "Power Operated Pedestrian Doors."
- B. UL Standard: Provide powered door operators complying with UL 325, Electric Door, Drapery, Gate, Louver and Window Operators and Systems.
- C. Emergency Exit Doors: Provide automatic entrance doors complying with requirements for doors serving as exit components in the means of egress as defined by NFPA 101 and as certified by the manufacturer for the application shown.
- D. The sliding door package shall be installed by factory-authorized and factory-trained personnel. The work shall be done in strict compliance with the manufacturer's recommendations and according to approved shop drawings.
- E. Particle Count: Certify that the automatic entrance meets the required cleanroom classification rating.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver doors and frames in approved protective coating and packaged to prevent dust from contaminating surfaces while in transit and during construction.
- B. Inspect doors and frames upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.
- C. Store doors and frames in an environmentally controlled area at building site under cover. Place units on minimum 4 inches high blocking, provide 1/4-inch spaces between stacked doors to promote air circulation. Ensure that the stacking and storage of the units does not induce warping or racking of the door units.

- D. Unpacking shall be done outside the cleanroom area.

1.8 WARRANTY

- A. Automatic doors capable of operating without failure of any component, for not less than 300,000 open-and-close cycles, with normal maintenance as defined in manufacturer's standard operating manual.
 - 1. Provide a minimum 5-year warranty against defects in materials and workmanship for the controller.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Stanley Access Technologies
 - 2. Besam, Inc.
 - 3. Horton Automatic Doors
 - 4. Ceco Door Product
 - 5. Commercial Door and Hardware
 - 6. LSI Cleanroom

2.2 MATERIALS

- A. Aluminum Extrusions: Alloy and temper as recommended by manufacturer for strength, corrosion resistance, application of required finish and control of color, but not less than 22,000 psi ultimate tensile strength. Provide main extrusions of not less than 0.125 inch wall thickness, except as otherwise indicated.
 - 1. Provide extruded glazing stops and other applied trim extrusions with minimum wall thickness of 0.062 inch.
- B. Aluminum Sheets: Alloy and temper as recommended by manufacturer for strength, corrosion resistance, abrasion resistance, and application of required finish and control of color. Provide sheets of not less than 0.062-inch thickness, except as otherwise indicated.
- C. Aluminum Fasteners: nonmagnetic stainless steel, or other non-corrosive metal compatible with the items being fastened.
 - 1. Do not use exposed fasteners except where unavoidable for the assembly of units, and unavoidable for the application of hardware.
- D. Steel Reinforcement and Brackets: Manufacturer's standard units with 2.0-oz. hot-dip zinc coating, ASTM A123, applied after fabrication.
- E. Compression Weather-stripping Manufacturer's standard replaceable stripping; either molded neoprene gaskets or molded PVC gaskets. Compression gaskets include collapsible finger guards at pivot jambs as well as bumper-type gaskets at doorstops and laps.
- F. Sealants and Gaskets: Use sealants and gaskets in the fabrication, assembly and installation of the work, which are recommended and guaranteed by the manufacturer to remain permanently elastic, non-shrinking, non-migrating, and without effect of outgassing.
- G. Glazing:

1. Tempered glass, conductive coating
2. Conductivity: 10^6 to 10^8 ohms grounded with wall system
3. Color: Orange Transparent
4. Transmittance: no measurable transmittance <500 nm wave length at locations requiring Orange Transparent glazing
5. Thickness: ¼"

2.3 COMPONENTS

- A. General:
1. Aluminum frames including top and bottom pivots.
 2. All Door hardware:
 - a. Passage hardware
 - b. Breakaway /Panic hardware
 3. Floating head and aluminum tube at door head.(See drawings for details).
 4. Door operator with electronic controller
 5. Operators housing guide rollers, door carrier.
 6. Glazing.
- B. Automatic sliding doors shall be overhead concealed, Electro-mechanical operator as manufactured by the listed Manufactures or substitute manufacturer approved by architect.
- C. Details shown are based upon standard details by manufacturer. It is intended that similar details by other acceptable manufacturers will be considered, provided they comply with the size requirements, particle requirements, and with minimum/maximum profile requirements shown.
- D. Operator Capacity: Size as recommended by manufacturer's published data for the door size, weight, movement, and condition of exposure, for long-term maintenance-free operation under normal traffic load for the type of occupancy indicated.
- E. Exposed Housing for Operators: Extruded or formed aluminum, 0.062 inch minimum thickness, with provisions for maintenance access, with fasteners concealed when door is in closed position.
- F. Adjustment Features: Provide operators with fully adjustable opening speeds, closing speeds, and checking speeds and length of time door remains open.
- G. Manufacturer's standard electric-mechanical drive unit, self-contained with connections for power and control wiring, power opening and either power or spring closing with safety release clutch for obstructed closing; and with checking for both opening and closing cycles. Provide for manual sliding/opening when power is off.
1. Operator Action: Single-slide
 2. Provide overhead-concealed operators with angled cover for airflow.
 3. Provide emergency breakaway swing feature (ANSI Standard 156.10 and BHMA 1601 Protection Standards).
 4. Provide power disconnect switch.
 5. All Electrical wiring to be concealed from view.
- H. Openings and seams in the electric motor housing shall be sealed with closed cell gasketed, non-VOC material or with non-VOC sealant.

2.4 ACCESSORIES

A. Operators

1. General

- a. Sizes and Profiles: The required sizes for door and frame units, and the profile requirements are shown on the drawings.
- b. Prefabrication: Except as otherwise indicated, provide each continuous unit of framework, door sidelights, transom panels, hardware, and accessory items, as a "packaged entrance" unit. Complete the fabrication, assembly, finishing, application of hardware and other work, before shipment to the project site, to the greatest extent possible. Disassemble only to the extent necessary for shipment and installation.
- c. Complete the cutting, fitting, forming, drilling, and grinding of metal work prior to cleaning and finishing. Cut material square and remove all burrs from all exposed edges, with no chamfer. Ease edges and corners to a radius of approximately 1/64th of an inch.
- d. Weld by methods recommended by AWS to avoid discoloration at welds. Grind exposed welds smooth and restore mechanical finish.
- e. Conceal fasteners, wherever possible.
- f. 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. Push Plate

1. Wall mount openers at locations as shown on drawings.
2. 6 1/4" diameter round stainless steel.
3. Engraved with, "Press to Open" and/or the Universal Handicap Symbol
4. Control is to be hard wired. No wireless or remote button operators are allowed. All wiring to be concealed from view.
5. Push Plate cannot be mounted on the frame.

2.5 FABRICATION

A. General:

1. Reinforce the work as necessary for performance requirements, and for support to the structure. Separate dissimilar metals with bituminous paint or preformed separators, which will prevent corrosion. Separate metal surfaces at moving joints with nonmetallic separators to prevent "freeze-up" of joints.

2.6 FINISHES

- A. Powder Coated Static Dissipative Epoxy Paint. Color to be selected by Architect to match wall system.
- B. Hardware Finishes:
 1. Clear Anodized Aluminum Finish

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's instructions and recommendations.

- B. Set units plumb, level and true to line, without warp or rack of frames or doors. Anchor securely in place. Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
- C. Install complete door operator system in accordance with manufacturer's instructions, including controls and controls wiring.
- D. Set tracks, header assemblies, operating brackets, rails and guides level and true to location with adequate anchorage for permanent support.
- E. Install thin metal foil conductor at each corner of glazing panel to make electrical connection between face of glazing and metal doorframe. Foil shall be sandwiched between the glazing and the glazing stop material. Cut excess foil exposed to view.

3.2 ADJUSTING

- A. After repeated operation of completed installation equivalent to 3 days' use by normal traffic (100 to 300 cycles), readjust door operators and controls for optimum operating condition and safety. Clean exposed surfaces.

3.3 CLEANING

- A. Clean aluminum surfaces promptly after installation, exercising care to avoid damage of the protective coating (if any). Remove excess glazing and sealant compounds, dirt and other substances. Exercise extreme care in cleaning glazing. Follow manufacturer's recommendations.

END OF SECTION 08300