

SPECIAL SPECIFICATION

SECTION 02447S

AUTOMATIC ENTRANCE DOORS

PART I - GENERAL

1.01 SUMMARY

- A. **WORK INCLUDED:** Furnish complete automatic aluminum door system, as specified, that has been manufactured, fabricated and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.
- B. **RELATED WORK:**
 - 1. Masonry: Division 4, applicable sections.
 - 2. Electrical: Division 16, applicable sections.
 - 3. Storefront; Glass; Hardware: Division 8, applicable sections.
 - 4. Perimeter Sealants; Insulation: Division 7, applicable sections.

1.02 REFERENCES

- A. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION:
 - 1. AAMA 101: Appendix Dissimilar Materials.
- B. AMERICAN ASSOCIATION OF AUTOMATIC DOOR MANUFACTURERS (AAADM).
- C. AMERICAN NATIONAL STANDARDS INSTITUTE:
 - 1. ANSI Z97.1: Safety Glazing Materials Used in Buildings - Methods of Test.
 - 2. ANSI A156.10: For Power Operated Pedestrian Doors; Sliding Doors section.
- D. AMERICAN SOCIETY FOR TESTING AND MATERIALS:
 - 1. ASTM B221: Aluminum- Alloy Extruded Bars, Rods, Shapes and Tubes.
- E. NATIONAL FIRE PROTECTION ASSOCIATION:
 - 1. NFPA 101: Code for Safety to Life from Fire in Buildings & Structures.
- F. THE ALUMINUM ASSOCIATION:
 - 1. AA Aluminum Finishes Manual.

G. UNDERWRITERS LABORATORY, INC.:

1. UL 325: Electrical Door, Drapery, Gate, Louver, and Window Operators and Systems.

H. UNDERWRITERS LABORATORY OF CANADA (ULC).

1.03 SUBMITTALS

A. **PRODUCT DATA:** Submit manufacturer's complete product and installation data.

B. **SHOP DRAWINGS:** Submit drawings showing layout, profiles, product components including anchorage, accessories, finish and glazing details (where required).

C. **QUALITY ASSURANCE AND CLOSEOUT SUBMITTALS:** Submit the following:

1. Manufacturer's Operation and Maintenance Data.

2. Warranty document as specified herein.

3. AAADM inspection compliance form completed and signed by certified AAADM inspector prior to doors being placed in operation as proof of compliance with ANSI A156.10.

1.04 QUALITY ASSURANCE

A. **INSTALLERS QUALIFICATIONS:** Installer experienced (as determined by contractor) to perform work of this section who has specialized in the installation of work similar to that required for this project and who is acceptable to product manufacturer.

B. **MANUFACTURER'S QUALIFICATIONS:** Manufacturer to have minimum (5) five years successful experience in the fabrication of automatic doors of the type required for this project. Manufacturer capable of providing field service representation during installation, approving acceptable installer and approving application method.

1.05 WARRANTIES

A. **MANUFACTURER'S WARRANTY:** Units to be warranted against defect in material and workmanship for a period of one year from the Date of Substantial Completion.

Manufacturer's warranty is in addition to, and not a limitation of, other rights owner may have under Contract Documents.

B. **DISTRIBUTOR'S WARRANTY:** One year warranty: Labor and transportation charges for defective parts replacement.

1.06 PROJECT CONDITIONS

Field Measurements: Verify actual dimensions/openings by field measurements before fabrication and record on shop drawings. Coordinate with fabrication and construction schedule to avoid construction delays.

1.07 DELIVERY, STORAGE AND HANDLING

- A. **ORDERING AND DELIVERY:** Comply with factory's ordering instructions and lead time requirements. Delivery shall be in factory's original, unopened, undamaged containers with identification labels intact.
- B. **STORAGE AND PROTECTION:** Provide protection from exposure to harmful weather conditions and vandalism.

PART 2 - PRODUCTS

2.01 MANUFACTURER

Automatic sliding door(s) furnished and installed shall be of type(s) and size(s) specified and as indicated on plans and door schedule and shall be manufactured by Horton Automatics, a division of Overhead Door Corporation.

2.02 EQUIPMENT

- A. **MANUFACTURED DOOR UNITS:** Shall include operator, header and track, jambs, sliding door panel(s), and sidelite(s). Units can be mounted within rough opening with sliding panel(s) sliding along sidelite; also, units can be surface mounted with sliding panel(s) sliding along wall. Units will be either single-slide or bipart and will be one of the following unit types:
 - 1. Type 010: Sliding panel(s) shall slide along interior side.
 - 2. Type 110: Slide-Swing panel(s) shall slide along exterior side.
 - 3. Type 310: Slide-Swing panel(s) shall slide along interior side. Breakaway sidelite.
 - 4. Type 410: Slide-swing panel shall slide between fixed sidelite/wall and breakaway sidelite.
- B. **OPERATOR:** The Electric Operating Mechanism shall be Series 2000 Linear Drive. The operator shall be mounted and concealed within the header. Operating force shall be accomplished through a 1/8 HP DC permanent magnet motor with 1800 RPM working with a threadless 1/2" (13 mm) diameter linear drive shaft made of induction hardened steel; a linear travel block with attached door hanger slides along the rotating shaft utilizing six aircraft quality ball bearings, integral clutch and rod lubrication.
 - 1. The Microprocessor Master Control shall have Horton Version 1 software and have programmable speed values for: Open Speed, Close Speed, Open Check, Close Check, and Open Cushion; however, Close Speed not to exceed 12" (305 mm) per second.

2. The control shall also have programmable time values for: Full-Open Time Delay and Partial-Open Time Delay. The four modes of operation will be: Day 1-way and 2-way, Night 1-way and 2-way. Diagnostics shall be accomplished via a digital display.

3. Microswitches for Open Check, Open Cut-off, Close Check and Close Cut-off shall be fully and independently adjustable and will instruct master control on sliding panel's position. An Adjustable Reversing Circuit will reopen door unit if closing path is obstructed. Maximum force required to prevent sliding panel from closing = 28 lbf.

4. Finger Safety: When unit slides open, strike rail of sliding panel will stop 3 1/2" (89 mm) short of adjacent sidelite; resulting opening is net slide.

5. Power On/Off Switch: Shall be located inside header and when switched OFF, unit reverts to free manual operation (likewise during electrical power failure).

6. Operator Options:

a. Autolock Fail Secure: If power fails the lock engages.

b. Autolock Fail Safe: If power fails the lock disengages.

c. Power Fail Open: If power fails the door slides open.

d. Power Fail Close: If power fails the door slides closed.

C. HEADER: Shall be aluminum with removable face plate and capable of self-support up to length of 16 feet (4877 mm) on standard door size and glazing. Optional transom of size and type indicated mounted on header. Header sizes to be:

1. 4" (102 mm) deep by 6" (152 mm) high for Types 010, 110, & 310.

2. 6" (152 mm) deep by 6" (152 mm) high for Type 410.

D. TRACK: Shall be aluminum, 1/4" (6 mm) wide, nylon covered, and replaceable. Rollers will be steel, high quality ball bearing wheels 1-1/4" (32 mm) diameter. Anti-Derailing shall be accomplished by means of a continuous aluminum extrusion full length of slide panel travel.

E. SLIDING PANEL(S) AND SIDELITE(S): Shall be aluminum, 1-3/4" (44 mm) deep with narrow stile horizontal and vertical rails. Weather-stripping to be along perimeter of sliding panel(s) and swingout sidelite(s). Concealed guides to stabilize bottom of sliding panel. Standard glazing prep to be for 1/4" (6 mm) glass.

1. Emergency Egress: Slide-swing panels can swing out 90° from any position of slide movement and require no more than 50 lbf. (222 N) of force applied at the lock stile to open. Swing-slide panels and swing-out sidelites have torsion spring designed to re-close panel if pushed open in the direction of egress; also, include intermediate horizontal rail. Units with emergency egress feature are UL listed as an exit way and are compliant with NFPA 101.

2. Sliding Panel and Sidelite Options:

- a. Medium stile horizontal or vertical rails.
- b. Additional and/or extra wide sidelites of size and type indicated.
- c. Recessed sidelite and track and non-threshold application.
- d. Horizontal muntin(s) of size and type indicated.
- e. Prep for glazing 5/16" (16 mm) to 1" (25 mm).

F. JAMBS/FRAME: Shall be aluminum. Jamb dimensions to be:

- 1. 1 3/4" (44 mm) deep by 4" (102 mm) wide for Types 010, 110, & 310.
- 2. 1 3/4" (44 mm) deep by 6" (152 mm) wide for Type 410.

G. THRESHOLD: Shall be aluminum, 1/2" (25 mm) tall by 4" (102 mm) wide.

- 1. Optional threshold to be 7" (178 mm) wide.

H. HARDWARE: Provided and installed in strike rail shall be:

- 1. Hookbolt Lock latching into jamb or adjacent strike rail.
- 2. Maximum Security Lock with 31/32" (25 mm) backset.
- 3. Keyed Cylinder mounted on exterior side with 1 5/32" (29 mm) standard size cylinder.
- 4. Thumbturn mounted on interior side.
- 5. Lockbolt into breakout carrier frame or reverse into threshold.
- 6. Hardware Options:

- a. Lockbolt into breakout carrier frame without hookbolt.
- b. Lock Indicator.
- c. Cylinder Guard.
- d. Cylinder Escutcheon.
- e. Panic Exit Device: Adams Rite 8600 (door type 310 only).
- f. Paddle Panic Exit Device: Jackson 1085P.

2.03 RELATED EQUIPMENT

- A. BASIC SENSOR SYSTEM: 24 VAC, class II circuit:
 - 1. Motion sensors: Microwave sensor shall be header-mounted each side of door unit for detection of traffic each direction. Installer to adjust so that minimum width of detection pattern equals clear door opening, minimum projection out from threshold equals 43" (1092 mm), and detection is within 5" (127 mm) of closed door.
 - 2. Hold-open beams: Two LED pulsed infrared photoelectric beams to be mounted in vertical rails of sidelite or in jambs at heights of 24" (610 mm) and 48" (1219mm). Sender/receiver arrangement parallels door opening: They shall be installed within 3" (76 mm) from the center of the slide door. The beams shall remain active from fully open to within 43" (1092 mm), of closed.

2.04 RELATED WORK REQUIREMENTS

- A. ELECTRICAL: 120 VAC, 60 cycle, 1 phase, 15 amp. Non-North American voltages can be 240 VAC (operator must have 240 volt power supply).
- B. GLASS AND GLAZING: Glass stops, glazing vinyl and setting blocks for field glazing as per Safety Glazing standard ANSI Z97.1.2. General contractor to coordinate acquisition of glass in thickness and type in accordance with manufacturer's recommendations for prescribed design.

2.05 MATERIALS, FINISHES AND FABRICATION

- A. EXTRUDED ALUMINUM: ASTM B221, 6063-T5 alloy and temper, anodized:
 - 1. Structural Header Sections: Minimum 3/16" (5 mm) thickness.
 - 2. Structural Frame Sections: Minimum 1/8" (3 mm) thickness.
 - 3. Structural Panel Sections: Commercial grade.
- B. FINISHES (for all exposed aluminum surfaces): Shall be one of the following:
 - 1. 204-R1 Clear: Arch. Class II Clear Anodized Coating, AA-MI2C22A31.
 - 2. 313-R1 Dark Bronze: Arch. Class II Anodized Coating, AA-MI2C22A32.
 - 3. 312-R1 Light Bronze: Arch. Class II Anodic Coating, AA-MI2C22A32.
 - 4. 315-R1 Black: Arch. Class II Anodic Coating, AA-MI2C22A32.
 - 5. Special Paint Coating: Color as selected.
 - 6. Clad with stainless steel or muntz metal (brass alloy): #7 or #4 finish.
- C. PANEL CONSTRUCTION: Mortise and tenon type joints, neatly and mechanically secured. Sash consists of snap-in glass stops, snap-in glazing beads and vinyl gaskets.

- D. FRAME CONSTRUCTION: Butt joints, neatly and mechanically secured by means of screws and formed aluminum corner brackets.
- E. OPERATOR CONSTRUCTION: Electromechanical, modular type construction.

PART 3 - EXECUTION

3.01 EXAMINATION

Site Verification of Conditions: Installer must verify that base conditions previously installed under other sections are acceptable for product installation according to with manufacturer's instructions. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of work. Do not start work until all negative conditions are corrected in a manner acceptable to the installer and manufacturer.

3.02 INSTALLATION

- A. GENERAL: Install door units plumb, level and true to line, without warp or rack of frames or sash with manufacturer's prescribed tolerances. Provide support and anchor in place.
- B. DISSIMILAR MATERIALS: Comply with AAMA 101, Appendix *Dissimilar Materials* by separating aluminum materials and other corrodible surfaces from sources of corrosion or electrolytic action contact points.
- C. WEATHER-TIGHT CONSTRUCTION: Install header and framing members in a bed of sealant or with joint filler or gaskets. Coordinate installation with wall flashings and other components of construction.
- D. ELECTRICAL: General or electrical contractor to install all wiring to operator on a separate circuit breaker routed into header.

3.03 CLEANING, ADJUSTMENT AND PROTECTION

- A. CLEANING: After installation, installer to take following steps:
 1. Remove temporary coverings and protection of adjacent work areas.
 2. Remove construction debris from construction site and legally dispose of debris.
 3. Repair or replace damaged installed products.
 4. Clean product surfaces and lubricate operating equipment for optimum condition and safety.
- B. ADJUSTMENT: Installer to adjust operator and controls for optimum condition and safety.
- C. ADVISE CONTRACTOR: Of precautions required through the remainder of the construction period, to ensure that doors will be without damage or deterioration (other than normal weathering) at the time of acceptance.

END OF SECTION