

HORTON AUTOMATICS - ARCHITECTURAL SPECIFICATIONS, 1/2008

FoldingAccess® Series 4-4200 Aluminum Folding Door System

DIVISION 08 - OPENINGS SECTION 08 42 29.13 – FOLDING AUTOMATIC ENTRANCES

Specifier Note: Coordinate and edit articles and paragraphs below to suit project requirements. Add section numbers and titles per CSI "MasterFormat" and specifier's practice. Consult with manufacturer regarding performance requirements for units applicable to project, as well as, related equipment and accessories required.

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. Concrete: Division 03, applicable sections.
 - 2. Masonry: Division 04, applicable sections.
 - 3. Thermal and Moisture Protection: Division 07, applicable sections.
 - 5. Openings: Division 08, applicable sections.
 - 6. Electrical: Division 26, applicable sections.

1.02 REFERENCES

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

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 shall be factory trained, certified by AAADM, and experienced to perform work of this section.
- B. **MANUFACTURER'S QUALIFICATIONS:** Manufacturer to have minimum (5) five years successful experience in the fabrication of intensive care 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 & 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 II – PRODUCTS

2.01 MANUFACTURER

HORTON AUTOMATICS, a division of Overhead Door Corporation, shall manufacture automatic folding door(s) of type(s) and size(s) specified on plans and door schedule.

2.02 EQUIPMENT

- A. **MANUFACTURED DOOR UNITS:** Shall include overhead concealed operator, breakout/track mechanism, top roller guide, top pivot, bottom pivot, folding (hinged) door panels, threshold and frame. The operator header is mounted directly over the door panels with the breakout/track mechanism secured to the underside of the header. Door unit configurations shall be either Fold-in type or Fold-out type and shall be one of the following:
 - 1. Single Fold: Two panels that fold to one side of opening.
 - 2. Bifold (pair): Four panel, center-parting door with two panels folding to each side of opening.
- B. **OPERATOR AND HEADER** The Electric Operating Mechanism shall be Series 4-4200. Operator shall be isolation mounted and concealed in an extruded aluminum side access header. Maximum current draw shall not exceed 3.15 amps. Header shall be 6" x 6" (152 mm x 152 mm).
 - 1. Opening action shall be accomplished by a 1/8 HP D.C. permanent magnet motor working through reduction gears to the output shaft. Gear train bearings shall be sealed ball bearing types.
 - 2. After time-delay, door closes using spring force of less than 15 lbs. Closing action shall be accomplished by a maximum-duty Quadracoil™ spring (four independent coil springs separated by teflon discs and enclosed in an external spring box) with a lifetime warranty. Close speed control shall be supplied by dynamic braking of the motor and shall be fully adjustable. Operator to act as a manual closer when power is off or when the master control unit is removed. An On/Off/Hold Open switch shall be supplied.
- C. **MASTER CONTROL:** Shall incorporate the following features:
 - 1. Adjustable time delay.
 - 2. Infinite adjustment to opening and open check speeds including adjusting the opening force without affecting the opening speed.

3. Immediate reversal of door motion without undue strain on the drive train. This will be accomplished by supplying stepped voltage to the motor. The door shall reverse when closing if an object stops the door.
 4. Motor Protection Circuit: A locked door motor protection circuit will be supplied that will shut off current to the motor when the door is inadvertently locked or otherwise prevented from opening.
 5. Emergency Breakout: When door is in emergency breakout position, power shall be removed from the operator.
- D. DOOR PANELS: Shall be aluminum, 1-3/4" (44 mm) deep with narrow stile vertical and horizontal rails. Lock and pivot rails shall have adjustable dual weather-stripping. Hinge points are protected with a 1" (25mm) Santoprene™ fingertguard for both seal and safety. Standard glazing prep to be for 1/4" (6 mm) glass.
1. The folding action of the door panels shall be accomplished with a top roller guide secured to the inactive door panel that slides in a track extruded as part of the breakout system. When the doors are in the folded open position, they shall provide a net opening of approximately 77-83 percent of the inside frame opening width. One folding panel closest to the jamb (active panel) shall be connected to the automatic swing operator at the top pivot and set on a floor mounted bottom pivot assembly. No bottom track shall be required.
 2. Emergency Egress: Unit can swing out (break out) 90° from any position of door's travel and requires no more than 50 lbf. (222 N) of force applied 1" from the edge of at the lock stile (on inactive panel) to open. Inactive panel shall be furnished with horizontal push bar mounted on interior side. Power to the operator shall be disconnected when the door panels are in this emergency breakout position. Horton Folding Type 4-4200 doors are compliant with NFPA 101.
 3. Door panel options:
 - a. 2 1/2" wide horizontal muntin (standard muntin bar) in lieu of push bar.
 - b. Custom horizontal muntins from 1/2" to 10" wide.
 - c. Custom bottom rails up to 6" wide.
 - d. Prep for glazing 5/16" (16 mm) to 1" (25 mm) with 65 lb. (30 kg) weight limit per panel.
- E. JAMB/FRAME: Shall be aluminum, 1-3/4" (44 mm) deep by 4" (102 mm) wide. Optional custom jambs up to 6" wide.
- F. THRESHOLD: Shall be aluminum, 1/4" (6 mm) tall by 4" (102 mm) wide, low profile type threshold in compliance with Americans with Disabilities Act. Optional 1/4" (6 mm) tall by 7" (178 mm) wide.
- G. HARDWARE: Shall include the following lock assemblies:
1. Provided and installed in strike rail:
 - a. Hookbolt Lock latching into jamb or adjacent strike rail.
 - b. Maximum Security Lock with 31/32" (25 mm) backset.
 - c. Keyed Cylinder mounted on exterior side with 1 5/32" (29 mm) standard size cylinder.
 - d. Thumbturn mounted on interior side.
 - e. Dropbolt into threshold (pairs only).
 2. Provided and installed in top horizontal rail of inactive panel:
 - a. Lockbolt engaging roller track on underside of header.
 - b. Maximum Security Lock with 31/32" (25 mm) backset.
 - c. Keyed Cylinder mounted on exterior side with 1 5/32" (29 mm) standard size cylinder.
 - d. Thumbturn mounted on interior side.
 3. Hardware Options: Lock Indicator, Cylinder Guard, Cylinder Escutcheon.

2.03 RELATED EQUIPMENT

- A. SENSOR SYSTEM: Shall be 24 VAC, class II circuit, Vista™ System for Folding Doors. This system shall provide for 2-way traffic and shall include the following:
1. Activation sensors: Shall be microwave motion sensor mounted on both sides of header. On fold side, spacer shall be provided to mount the sensor slightly away from the door.
 2. Safety sensor: Active infrared sensor shall be mounted on fold side of header.
 - a. Sensor shall keep a closed door from opening or an open door from closing when safety zone (fold side) is occupied.

- b. When door is in open position the fold side safety sensor shall provide threshold protection covering the full width of the door way overlapping into activating zone.
 - 3. Optional Knowing Act switch (used with Vista™ System for Folding Doors). Specify as applicable: push plates, push buttons, radio control switch, or key switch.
- B. GUARD RAILS: Aluminum "L" type guard rails, 32" long x 30" high with bar and no mesh, shall be furnished on the fold-side of door to protect cross-traffic as per ANSI A156.10.

2.04 RELATED WORK REQUIREMENTS

- A. ELECTRICAL: 120 VAC, 60 cycle, 1 phase, 15 amp service (in conduit) to each folding door unit on a dedicated 20 amp circuit breaker routed into header. Non-North American voltages can be 240 VAC (operator must have 240 volt power supply)
- B. GLASS AND GLAZING: Glazing Materials: 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 2 Clear Anodized Coating, AA-MI2C22A31.
 - 2. 313-R1 Dark Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
 - 3. 312-R1 Light Bronze: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
 - 4. 315-R1 Black: Arch. Class 1 Anodized Coating, AA-MI2C22A44.
 - 5. Special Paint Coating: Color as selected.
 - 6. Clad with stainless steel or muntz metal (brass alloy): #7 or #4 finish.
- C. PANEL CONSTRUCTION:
 - 1. Corner block type with 3/16" steel backup plate construction, mechanically secured with minimum of four hardened steel screws. Sash consists of snap-in glass stops, snap-in glazing beads and vinyl gaskets.
 - 2. Weatherstripping material captured in extruded aluminum door panel. Door nosing weatherstrip to be spring-loaded adjustable astragal type. Surface applied self-adhesive weatherstripping not acceptable.
 - 3. Panel to be supplied with adjustable glass setting block to allow for adjusting of door to meet site conditions eliminating the need for additional shims.
- D. FRAME CONSTRUCTION: Butt joints, mechanically secured by means of screws and formed aluminum corner brackets.
- E. OPERATOR CONSTRUCTION: Electromechanical.

PART III - 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: 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. ADJUSTMENTS & PRECAUTIONS: AAADM certified technician shall inspect & adjust installation to assure compliance with ANSI A156.10. Advise General 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.

Note: Horton Automatics reserves the right to make product improvements and change specifications without notice.

END OF SECTION