SECTION 08 42 29.43
SLIDING AUTOMATIC ENTRANCES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Exterior, single-slide and bi-parting, wind pressure and impact rated sliding automatic entrances with automatic locking.

B. Interior, single-slide, sliding automatic entrances without locking.

1.2 RELATED REQUIREMENTS

A. Section 01 60 00 – Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.

B. Section 07 90 00 - Joint Protection: Caulking to the extent not specified in this section.

C. Section 08 40 00 - Aluminum-Framed Entrances, Storefronts and Curtain Walls: Entrances furnished and installed separately.

D. Section 08 71 00 - Door Hardware: Hardware to the extent not specified in this Section.

E. Division 26 00 00 – Electrical: Electrical connections provided separately, including conduit and wiring for power to, and control of, sliding automatic entrances.

F. Division 28 00 00 - Electronic Safety and Security: Systems not specified in this section.

1.3 DEFINITIONS

A. Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.

B. Knowing act: Consciously initiating the opening of a power operated door using acceptable methods including wall mounted switches such as push plates and controlled access devices such as keypads, card readers and key switches.

C. Safety Device: Device that prevents a door from opening or closing, as appropriate.

1.4 REFERENCE STANDARDS

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. American Architectural Manufacturers Association (AAMA):
1. AAMA 607.1 - Clear Anodic Finishes for Architectural Aluminum.
2. AAMA 611 Voluntary Specification for Anodized Architectural Aluminum.
3. AAMA 701 Voluntary Specification for Pile Weatherstripping and Replaceable Fenestration Weatherseals.

C. American Association of Automatic Door Manufacturers (AAADM).

D. American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA):
   1. ANSI/BHMA A156.10: Standard for Power Operated Pedestrian Doors.
   2. ANSI/BHMA A156.5: Standard for Auxiliary Locks and Associated Products.
   3. ANSI Z97.1: Standard for Safety Glazing Materials Used In Buildings - Safety Performance Specifications And Methods Of Test.

E. American Society for Testing and Materials (ASTM):
   1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   2. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
   3. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

F. American Welding Society (AWS):
   1. AWS A5.10/A5.10M - Specification For Bare Aluminum And Aluminum-Alloy Welding Electrodes And Rods.

G. Consumer Product Safety Commission (CPSC):
   1. CPSC 16 CFR 1201: Safety Standard for Architectural Glazing Materials.

H. Florida Building Code.

I. Florida Administrative Code (FAC):
   1. 9N-3 – Product Approval.

J. International Code Council (ICC):
   1. IBC: International Building Code.

K. International Organization for Standardization (ISO):
   1. ISO 9001 - Quality Management Systems.

L. Miami-Dade County Building Code Compliance Office:
   1. Product Control Division, Notice of Acceptance.

M. National Fire Protection Association (NFPA):
   1. NFPA 101 – Life Safety Code.
   2. NFPA 70 – National Electric Code.

N. National Association of Architectural Metal Manufacturers (NAAMM):
   1. Metal Finishes Manual for Architectural and Metal Products.

O. Underwriters Laboratories (UL):
   1. UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.

1.5 COORDINATION

A. Templates: Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing automatic entrances to comply with indicated requirements.

B. Electrical System Roughing-in: Coordinate layout and installation of automatic entrance door assemblies with connections to power supplies, remote activation devices, and security access control system. See Division 28 Section "Electronic Safety and Security" for systems not

provided under this section.

C. System Integration: Integrate sliding automatic entrances with other systems as required for a complete working installation.
   1. Provide electrical interface control capability for operation of sliding automatic entrances by secure activation system on doors with electric locking.
   2. Provide electrical interface to allow automatic entrance controls, mode of operation, to be changed by Owner’s access control system. Provide supplemental relays required to control mode of operation.

1.6 SUBMITTALS

A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.

B. Shop Drawings: Include plans, elevations, sections, details, hardware mounting heights, and attachments to other work.

C. Color Samples for selection of factory-applied color finishes.

D. Closeout Submittals:
   1. Owner’s Manual.
   2. Warranties.

E. Design Certifications, Exterior Entrances:
   1. Product Control Division, Notice of Acceptance from Miami-Dade County Building Code Compliance Office.
   2. Product Approval in accordance with FAC 9B-72.

1.7 QUALITY ASSURANCE

A. Source Limitations: Obtain automatic entrance door assemblies through one source from a single manufacturer.

B. Qualifications:
   1. Installer Qualifications: Manufacturer's authorized representative, with certificate issued by AAADM, who is trained for installation and maintenance of units required for this Project.
   2. Manufacturer Qualifications: A qualified manufacturer with a manufacturing facility compliant with ISO 9001.
   3. Manufacturer shall have in place a national service dispatch center providing 24 hours a day, 7 days a week, emergency call back service.

C. Certifications:
   1. Automatic sliding door systems shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards:
      a. ANSI/BHMA A156.10.
      b. IBC.
      c. NFPA 101.
      d. UL 325 listed.
   2. Additional Certifications for Exterior Wind Pressure and Impact Rated Entrances:
      a. Miami-Dade County Building Code Compliance Office.
      b. Florida Building Code.

1.8 FIELD CONDITIONS

A. Field Measurements: General Contractor shall verify openings to receive automatic entrance door assemblies by field measurements before fabrication and indicate measurements on Shop Drawings.

B. Mounting Surfaces: General Contractor shall verify all surfaces to be plumb, straight and secure; substrates to be of proper dimension and material.

C. Other trades: General Contractor shall advise of any inadequate conditions or equipment.

1.9 WARRANTY

A. Automatic Entrances shall be free of defects in material and workmanship for a period of one (1) year from the date of substantial completion.

B. During the warranty period the Owner shall engage a factory-trained technician to perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner.

C. During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal working hours.

PART 2 - PRODUCTS

2.1 AUTOMATIC ENTRANCES

A. Manufacturer: Stanley Access Technologies (www.stanleyaccess.com):
1. Exterior Entrances: Dura-Storm™ 3000 Series, Level E, wind pressure and impact rated sliding automatic entrances.
2. Interior Entrances: Dura-Glide™ 3000 Series sliding automatic entrances.
3. Contact: Stanley Access Technologies, Nel Pena; Phone: 305-764-2604, Email: suegar.pena@allegion.com.

B. Substitutions: Refer to Section 01 25 00 – Substitution Procedures.

C. Product Options: Drawings indicate sizes, profiles, and dimensional requirements of automatic entrance door assemblies and are based on the specific system indicated.

2.2 AUTOMATIC ENTRANCE DOOR ASSEMBLIES

A. General: Provide manufacturer's standard automatic entrance door assemblies including doors, sidelights, framing, headers, carrier assemblies, roller tracks, door operators, activation and safety devices, and accessories required for a complete installation.

B. Sliding Automatic Entrances:
1. Single-Slide Entrances:
   a. Configuration: One sliding leaf and one full sidelight; single-slide.
   b. Traffic Pattern: Two-way.
   c. Emergency Breakaway Capability: Sliding leaf and sidelight.
   d. Mounting: Between jambs.
   e. Maximum Dimensions, Exterior Entrances: Not to exceed dimensions specified in product approvals.
2. Bi-Parting Entrances:
   a. Configuration: Two sliding leaves and two full sidelights; bi-parting.
   b. Traffic Pattern: Two-way.
   c. Emergency Breakaway Capability: Sliding leaves and sidelights.
   d. Mounting: Between jambs.

e. Maximum Dimensions: Not to exceed dimensions specified in product approvals; see 1.7 Quality Assurance.

2.3 DESIGN / PERFORMANCE CRITERIA

A. General: Provide automatic entrance door assemblies capable of withstanding loads and thermal movements based on testing manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Operating Range: Minus 30 deg F (Minus 34 deg C) to 130 deg F (54 deg C).

C. Opening-Force Requirements for Egress Doors: Force shall be adjustable; but, not more than 50 lbf (222 N) required to manually set swinging egress door panel(s) in motion.

D. Closing-Force Requirements: Not more than 30 lbf (133 N) required to prevent door from closing.

E. Air Infiltration, Exterior Entrances: Maximum air leakage through fixed glazing and framing areas of 1.25 cfm/sf. (6.4 L/s-m^2) of fixed entrance system area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 6.24 lbf/sf (299 Pa).

F. Design Pressures, Exterior Entrances: Impact rated sliding automatic entrance systems shall be designed to withstand up to 80 psf (3830 Pa), wind force in both the positive and negative direction, and be large and small missile impact rated in accordance with Florida Building Code.

G. Exterior impact rated sliding automatic entrances specified with automatic locking shall be designed to function as follows:
1. Entrances shall be normally closed and locked by automatic locking system with exterior motion activation system disabled. Interior motion activation system to remain enabled; free egress.
2. Upon signal from exterior secure activation device, sliding automatic entrances will unlock and open enabling motion activation system. Entrance will be held open as long as an object or pedestrian remains in the activation or safety zones.
3. Once all activation and safety zones have cleared the entrance will close and re-lock, returning to normal state.
4. At any time during the cycle emergency egress can be achieved by utilizing the emergency breakaway feature.

2.4 REGULATORY REQUIRMENTS

A. Emergency-Exit Door Requirements: Comply with requirements of authorities having jurisdiction for automatic entrances serving as a required means of egress.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

2.5 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
1. Headers, stiles, rails, and frames: 6063-T6.
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
3. Sheet and Plate: ASTM B 209.

B. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

C. Sealants and Joint Fillers: Performed under Section 07 90 00 - Joint Protection.

2.6 COMPONENTS

A. Framing Members: Manufacturer's standard extruded aluminum reinforced as required to support imposed loads.
1. Nominal Size: 1 3/4 inch by 6 inch (44 by 152 mm).
2. Concealed Fastening: Framing shall incorporate a concealed fastening pocket, and continuous flush insert cover, extending full length of each framing member.

B. Stile and Rail Doors and Sidelights: Manufacturer's standard 1 ¾ inch (45 mm) thick glazed doors with extruded-aluminum tubular stile and rail members. Incorporate concealed tie-rods that span full length of top and bottom rails. All corners, at exterior entrances, including intersections of stiles and rails, or stiles and muntin bars, shall be welded secure.
1. Glazing Stops and Gaskets: Snap-on, extruded-security aluminum stops and preformed gaskets.
2. Stile Design: Narrow stile; 2 inch (51 mm) nominal width.
3. Bottom Rail Design: Minimum 10 inch (254 mm) nominal height.
4. Muntin Bars: Horizontal tubular rail member for each door; 2 inch (51 mm) nominal height.
5. Steel Reinforcing, Exterior Entrances: Minimum 1 1/4 inch x 1 1/4 inch x 3/16 inch (32 mm x 32 mm x 5 mm) steel tube in all vertical stiles.

C. Glazing: Glaze sliding automatic entrances in accordance with product approvals and the following:
1. Provide safety glass complying with ANSI Z97.1 and CPSC 16 CFR 1201 for Category II materials.
2. Exterior Entrances: 9/16 inch (14 mm) laminated impact rated glass as specified in product approvals. Mechanically fastened outboard gutter stop with approved structural glazing tape.
3. Interior Entrances: 1/4 inch (6 mm) clear, fully tempered, in all panels.

D. Headers: Fabricated from extruded aluminum and extending full width of automatic entrance door units to conceal door operators, carrier assemblies, and roller tracks. Provide hinged or removable access panels for service and adjustment of door operators and controls. Secure panels to prevent unauthorized access.
1. Mounting: Concealed, with one side of header flush with framing.
2. Capacity: Capable of supporting up to 220 lb (100 kg) per panel, up to four panels, over spans up to 14 feet (4.3 m) without intermediate supports.

E. Carrier Assemblies and Overhead Roller Tracks: Manufacturer's standard carrier assembly that allows vertical adjustment of at least 1/8 inch (3 mm); consisting of urethane with precision steel lubricated ball-bearing wheels, operating on a continuous roller track. Support panels from carrier assembly by load wheels and anti-riser wheels with factory adjusted cantilever and pivot assembly. Minimum two ball-bearing load wheels and two anti-rise rollers for each active leaf. Minimum load wheel diameter shall be 2 1/2 inch (64 mm); minimum anti-rise roller diameter shall be 2 inch (51 mm).

F. Thresholds: Manufacturer's standard thresholds as indicated below:
1. Continuous standard tapered extrusion double bevel.
2. All thresholds to conform to details and requirements for code compliance.

G. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.

H. Signage: Provide signage in accordance with ANSI/BHMA A156.10.

2.7 DOOR OPERATORS

A. General: Provide door operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, operation under normal traffic load for type of occupancy indicated.

B. Electromechanical Operators: Self-contained overhead unit powered by a minimum of 1/4 horsepower, permanent-magnet DC motor with gear reduction drive, microprocessor controller; and encoder.
1. Operation: Power opening and power closing.
2. Features:
a. Adjustable opening and closing speeds.
b. Adjustable open check and close check speeds.
c. Adjustable hold-open time between 0 and 30 seconds.
d. Obstruction recycle.
e. On/Off switch to control electric power to operator.
f. Energy conservation switch that reduces door-opening width.
g. Closed loop speed control with active braking and acceleration.
h. Adjustable obstruction recycle time delay.
i. Self-adjusting stop position.
j. Self-adjusting closing compression force.
k. Onboard sensor power supply.
l. Onboard sensor monitoring.
m. Optional Switch to open/Switch to close operation.
n. Fire alarm interface, configurable to safely open or close the entrance on signal from fire alarm system.
3. Mounting: Concealed.
4. Drive System: Synchronous belt type.

C. Electrical service to door operators shall be provided under Division 26 00 00 - Electrical. Minimum service to be 120 VAC, 5 amps.

2.8 ELECTRICAL CONTROLS

A. Electrical Control System: Electrical control system shall include a microprocessor controller and a high-resolution position encoder. The encoder shall monitor revolutions of the operator shaft and send signals to microprocessor controller to define door position and speed.
1. The high-resolution encoder shall have a resolution of not less than 1024 counts per revolution. Systems utilizing external magnets and magnetic switches are not acceptable.
2. Electrical control system shall include a 24 VDC auxiliary output rated at 1 amp.

B. Performance Data: The microprocessor shall collect, and store performance data as follows:
1. Counter: A non-resettable counter to track operating cycles.
2. Event Reporting: Unit shall include non-volatile event and error recording including number of occurrences of events and errors, and cycle count of most recent events and errors.
3. LED Display: Display presenting the current operating state of the controller.

C. Controller Protection: The microprocessor controller shall incorporate the following features to ensure trouble free operation:
1. Automatic Reset Upon Power Up.
2. Main Fuse Protection.
3. Electronic Surge Protection.

4. Internal Power Supply Protection.
5. Resetable sensor supply fuse protection.
6. Motor Protection, over-current protection.

D. Soft Start/Stop: A “soft-start” “soft-stop” motor driving circuit shall be provided for smooth normal opening and recycling.

E. Obstruction Recycle: Provide system to recycle the sliding panels when an obstruction is encountered during the closing cycle. If an obstruction is detected, the system shall search for that object on the next closing cycle by reducing door closing speed prior to the previously encountered obstruction location, and will continue to close in check speed until doors are fully closed, at which time the doors will reset to normal speed. If obstruction is encountered again, the door will come to a full stop. The doors shall remain stopped until obstruction is removed and operate signal is given, resetting the door to normal operation.

F. Programmable Controller: Microprocessor controller shall be field programmable.
1. The following parameters may be adjusted:
   a. Operating speeds and forces as required to meet specified ANSI/BHMA standard.
   b. Adjustable and variable features specified.
   c. Reduced opening position.
2. Manual programming shall be available through local interface which has a two-digit display with a selection control including three push buttons.

2.9 ACTIVATION AND SAFETY DEVICES

A. Primary Activation, Exterior Entrances: Jamb-mounted, secure activation device provided by others as specified in Division 28 00 00 - Electronic Safety and Security.

B. Combined Activation and Safety Sensors: Combined activation and safety sensors shall, in a single housing, detect motion and presence in accordance with ANSI/BHMA A156.10. Motion shall be detected using K-band microwave technology, presence by active infrared reflection technology.
1. Mounting Height: Up to 11.5 feet (3.5 m) above finish floor
2. Temperature Range: Between -31°F and 131°F (-35°C to 55°C) in all environmental conditions
3. Relays: Form C, 50V at 0.3A for both activation and safety. Hold time of less than 0.5 seconds.
4. Detection Pattern: When detection is made in the activation zone, and the entrance opens, the safety zone shall extend through the threshold on each side; creating an X-pattern. When activation and safety zones are cleared and the entrance closes the sensor will ignore the X-pattern safety zones.
5. Motion activation is secondary to knowing act activation, on exterior entrances, when set for secure operation.
6. Combined motion and presence sensors shall be equal to or better than X-Zone Sensor by Optex.

C. Photoelectric Beams: In addition to the threshold sensor include a minimum of two (2) doorway holding beams. Photoelectric beams shall be pulsed infrared type, including sender receiver assemblies for recessed mounting. Beams shall be monitored by electrical controls for faults and shall fail safe.

D. Presence Sensor Monitoring: Sliding automatic entrances control system shall include a means to verify the functionality of all active presence sensors in accordance with ANSI/BHMA A156.10. A detected fault shall cause automatic operation to cease until the fault is corrected.

2.10 HARDWARE

A. General: Provide units in sizes and types recommended by automatic entrance door and hardware manufacturers for entrances and uses indicated.

B. Emergency Breakaway Feature: Provide release hardware that allows panel(s) to swing out in direction of egress to full 90 degrees from any position in sliding mode. Maximum force to open panel shall be 50 lbf (222 N) according to ANSI/BHMA A156.10. Interrupt powered operation of panel operator while in breakaway mode.
1. Emergency breakaway feature shall include at least two adjustable detent devices mounted in each breakaway panel, one top mounted and one bottom mounted, to control panel breakaway force.
2. Limit Arms, Interior Entrances: Limit arms shall be provided to control swing of non-sliding panels on break-out; swing shall not exceed 90 degrees. Limit arms shall be spring loaded to prevent shock and include adjustable friction damping.
3. Wind Resistant Damper, Exterior Entrances: Provide factory installed concealed gas dampers in each breakaway panel to protect door panels from wind damage. Dampers shall be designed to slow panel movement after breakout.

C. Panic Release Locking, Exterior Entrances: Manufacturer's approved multi-point locking system with panic release hardware as follows:
1. Two-Point Locking, Single-Slide Entrances: Provide locking components within sliding panel, including panic release hardware, that extend flush bolts into overhead carrier assembly and threshold of sliding leaf. Flush bolts shall be manually dogged, or disengaged, for normal operation. Lock cylinders shall be provided to allow for disengagement of flush bolts from the exterior.
2. Four-Point Locking, Bi-parting Entrances: Provide locking components within sliding panels, including panic release hardware, that extend flush bolts into overhead carrier assemblies and threshold of both sliding leaves. Flush bolts shall be manually dogged, or disengaged, for normal operation. Lock cylinders shall be provided to allow for disengagement of flush bolts from the exterior.
3. Cylinders: As specified in Division 8 Section "Door Hardware."
4. Panic release hardware shall be equal to or better than, Adams Rite G86-11-36.

D. Automatic Locking System, Exterior Entrances: Provide automatic locking hardware on sliding automatic entrances as follows:
1. System shall include a fail-secure electric solenoid locking device with a self-contained solid-state electronic control factory mounted inside the header.
2. When set for secure operation, the automatic sliding entrance(s) shall electrically latch in the closed position preventing door panels from sliding manually, returning the system to its locked status.
3. During a power interruption:
   a. The solenoid lock shall be engaged, preventing the doors from sliding manually.
   b. Means of egress shall be accomplished by standard emergency breakaway feature.

E. Event Timer, Exterior Entrances: Provide event timer suitable for installation in sliding automatic entrance header as follows:
1. Design: 24-hour, 7 day event scheduling
2. Electrical: 12/24 VAC/VDC operation at 50mA maximum.
3. Relays: DPDT rated 10 amps, momentary and maintained action.
4. Event Capacity: 50 individually programmed daily/weekly events.
5. Display: LCD
6. Battery back-up
7. Event timer shall be equal to or better than Altronix PT724A.

F. Deadlocks, Interior Entrance: None.

G. Uninterruptible Power Supply (UPS): Provide UPS on designated sliding automatic entrances in accordance with the following:
1. Bi-parting Entrances: UPS shall be a fully integrated unit designed to fit within the door header and shall be UL listed for operation with the automatic door system provided herein.
2. Single-slide Entrances: UPS shall be specifically designed and manufactured for operation with the sliding automatic entrances provided herein. UPS shall be remotely mounted, where indicated, within an enclosure.
3. Upon main power interruption to the door:
   a. The UPS shall supply power to the operator, controls, activation, and safety systems of the sliding automatic entrance door.
   b. The UPS shall provide up to 1.5 hours of normal operation.
4. UPS unit shall include a low battery shut down feature to safely open or close the door prior to complete battery discharge.
5. UPS unit shall include an audible battery replacement alarm to indicate that the battery will no longer accept a charge and replacement is required.

H. Control Switch: Provide manufacturer’s standard rotary switch mounted on the interior jamb to allow for full control of the automatic entrance door. Controls to include, but are not limited to:
1. One-way traffic
2. Reduced Opening
3. Open/Closed/Automatic

I. Power Switch: Sliding automatic entrances shall be equipped with a two position “On/Off” illuminated rocker switch to control power to the door.

J. Sliding Weather Stripping: Manufacturer's standard replaceable components complying with AAMA 701; made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.
1. Exterior Entrances:
   a. Provide double pile weather stripping on lead stiles of sliding panels.
   b. Provide single pile weather stripping between carrier and header, lead stiles of sidelights, and on pivot stiles of sliding panels.

K. Weather Sweeps: Manufacturer’s standard adjustable, nylon brush sweep mounted to underside of door bottom.

2.11 FABRICATION

A. General: Factory fabricates automatic entrance door assembly components to designs, sizes, and thickness indicated and to comply with indicated standards.
1. Form aluminum shapes before finishing.
2. Use concealed fasteners to greatest extent possible.
   a. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
   b. Reinforce members as required to receive fastener threads.

B. Framing: Provide automatic entrances as prefabricated assemblies.
1. Fabricate tubular and channel frame assemblies with manufacturer's standard mechanical or welded joints. Provide sub-frames and reinforcement as required for a complete system to support required loads.
2. Exterior Entrances: Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.

3. Perform fabrication operations in manner that prevents damage to exposed finish surfaces.
4. Form profiles that are sharp, straight, and free of defects or deformations.
5. Prepare components to receive concealed fasteners and anchor and connection devices.
6. Fabricate components with accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.

C. Doors: Factory fabricated and assembled in profiles indicated. Reinforce as required to support imposed loads and for installing hardware.

D. Door Operators: Factory fabricated and installed in headers, including adjusting and testing.

E. Glazing: Fabricate framing with minimum glazing edge clearances for thickness and type of glazing indicated.

F. Hardware: Factory install hardware to the greatest extent possible; remove only as required for final finishing operation and for delivery to and installation at Project site.

2.12 ALUMINUM FINISHES

A. General: Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes. Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes.

B. Class II, Clear Anodic Finish: AA-M12C22A31 Mechanical Finish: as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.40 mils minimum complying with AAMA 611-98, and the following:
1. AAMA 607.1
2. Applicator must be fully compliant with all applicable environmental regulations and permits, including wastewater and heavy metal discharge.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine conditions for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of automatic entrances. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Do not install damaged components. Fit frame joints to produce joints free of burrs and distortion. Rigidly secure non-movement joints.

B. Entrances: Install automatic entrances plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.
1. Install surface-mounted hardware using concealed fasteners to greatest extent possible.
2. Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support.

C. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 00 00 – Electrical.

D. Glaze sliding automatic entrance panels in accordance with, the Glass Association of North America (GANA) Glazing Manual, published recommendations of glass product manufacturer, entrance manufacturer’s instructions, and product approvals.

E. Sealants: Comply with requirements specified in Section 07 90 00 - Joint Protection.

3.3 FIELD QUALITY CONTROL

A. Testing Services: Factory Trained Installer shall test and inspect each automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

3.4 REPAIR

A. Repair damaged finish to match original finish.

3.5 ADJUSTING

A. Adjust door operators, controls, and hardware for smooth and safe operation, for tight closure, and complying with requirements in ANSI/BHMA A156.10.

3.6 CLEANING

A. Clean glass and aluminum surfaces promptly after installation. Remove excess glazing and sealant compounds, dirt, and other substances. Comply with requirements in Section 08 80 00 - Glazing, for cleaning and maintaining glass.

END OF SECTION 08 42 29.23