

SECTION 08 32 13
SLIDING GLASS DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Sliding, telescoping, automatic opening, aluminum-framed glass doors and sidelites for interior locations consisting of one fixed leaf and one operable leaf, operator, header with roller track, carrier assemblies, framing jambs, sliding door panel(s), sidelite(s), activation, safety devices and accessories required for complete installation.

1.2 RELATED SECTIONS

- A. Integral Blinds: Section 12 21 11 - BETWEEN GLASS BLINDS.
- B. Division 26 Sections: Connection of door operators to electrical power distribution system.

1.3 PERFORMANCE REQUIREMENTS

- A. Sliding aluminum-framed glass doors for interior locations including:
 - 1. Extruded aluminum sections, shop fabricated,
 - 2. Vision glass, related flashings,
 - 3. Anchorage and attachment devices
- B. Style: Horizontal sliding units and fixed, right- and left-hand units as shown on Drawings.
- C. Except for locations indicated to be smoke-tight or fire rated, provide trackless system.
- D. Equipment shall accommodate weight of doors.
- E. Header shall be support doors of 220 lbs minimum per leaf over a span of 14'-0" with a deflection of less than 0.1 inch; removable faceplate. Door track and anti-riser guide shall be an integral part of structural member.
- F. Interior doors in smoke-rated walls and partitions shall bear the Underwriters Laboratory label indicating compliance with UL 1784 and NFPA 105.
- G. Provide doors compliant with 2010 FGI Guidelines for Airborne Infection Isolation Room (AIR) Systems.
- H. Provide doors compliant with ASTM E283-04 Standard Air Infiltration Test for positive and negative pressure for isolation rooms.
- I. Finger Safety: When unit slides open, strike rail of sliding panel will stop short of adjacent sidelite; resulting opening is net slide.

1.4 SUBMITTALS FOR REVIEW

- A. Product Data: Provide component dimensions, fastener types, glass, internal drainage details, data on glass units, performance criteria tests and certificates and cuts of hardware and accessories.
- B. Shop Drawings: Indicate dimensions of units and openings, wall elevations, typical unit elevations, method for achieving air and vapor barrier seal to adjacent construction, anchorage methods and locations, hardware, installation details and full-size details of typical composite members and glazing details. Use Contracting Officer's naming conventions in submittals.
- C. Samples: Submit a sample of each required finish, 4 inches long minimum illustrating typical sliding door panel corner construction, door frame corner construction, and finishes.

1.5 QUALITY ASSURANCE

- A. Installer:
 - 1. Company who has completed sliding aluminum-framed glass door installations similar in material, design, and extent to those indicated for this Project.
 - 2. A company whose work has resulted in construction with a record of successful in-service performance; with minimum three years experience trained and approved by manufacturer.
 - 3. A company with installers who are certified by and in current standing with the American Association of Automatic Door Manufacturers (AAADM). Provide AAADM certified technician(s) on this Project.
- B. Manufacturer: Company specializing in fabrication of sliding doors with three years experience. Maintain within 500 miles of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.
- C. Fabricate door assembly according to ANSI/AAMA 101-93.
- D. Conform to ANSI/BHMA A156.10-1985 and ANSI A117.1.
- E. Source Limitations: Obtain sliding aluminum-framed glass doors through one source from a single manufacturer.

1.6 REGULATORY REQUIREMENTS

- A. Conform to applicable code for requirements applicable to fire rated doors and frames.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Extruded Aluminum: Provide alloy and temper recommended by sliding aluminum-framed glass door manufacturer for strength, corrosion resistance, and application of required finish, but not less than 22,000-

psi (150-MPa) ultimate tensile strength and not less than 0.062-inch (1.6-mm) thickness at any location for the main frame and panel members.

- B. Fasteners: Provide aluminum, nonmagnetic stainless steel, solvent-free epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with sliding aluminum-framed glass door members, trim, hardware, anchors, and other components.
- C. Anchors, Clips, and Accessories: Provide anchors, clips, and sliding aluminum-framed glass door accessories of aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 (Severe) service conditions; provide enough strength to withstand design pressure indicated.
- D. Joint Sealants: For installation in exterior perimeter joints around sliding aluminum-framed glass doors, as specified in Division 07 Section "Joint Sealants."

2.2 GLASS

- A. Glass and Glazing Materials:
 - 1. Door 304a: Provide single pane of glass that complies with safety glazing requirements and with Division 08 Section "Glazing."
 - 2. Door 304: Provide glazing that accommodates integral blinds as specified in Section 122111.

2.3 HARDWARE

- A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, or other corrosion-resistant material compatible with aluminum; designed to smoothly operate, tightly close, and securely lock sliding aluminum-framed glass doors. Do not use aluminum in frictional contact with other metals. Where exposed, provide solid bronze; extruded, cast, or wrought aluminum; solid white metal with special coating finish; or nonmagnetic stainless steel.
- B. Pull Handles: Manufacturer's standard recessed type on each side of sliding panels.
- C. Positive Latch: Provide manual sliding doors with locks that will latch active leaves in place when closed. Provide lever handle on each side of active leaf doors to unlock sliding doors.
- D. Hanger Assembly: Factory adjusted cantilever support and pivot assembly. Assembly allows sliding panels to swing outward for emergency egress without need for lower pivot support.
- E. Top Rollers: Steel, 1-1/4 inch diameter minimum, minimum 4 rollers per panel; vertically adjustable with steel life-time lubricated ball bearing centers. Anti-Derailing shall be accomplished by means of a separate adjustable roller or continuous aluminum extrusion full length of slide panel travel.
- F. Limit Stops: Resilient rubber.
- G. Locks: Install manufacturer's standard pull and outside keyed cylinder lock, and keyless latching device on each movable panel, lockable from

the inside only and outside. Adjust latching device to allow unobstructed movement of the panel across adjacent panel in the direction indicated. Provide cylinders under Section 087100.

- H. Weatherstripping: Adjustable neoprene sweeps on door bottoms, double pile weatherstripping on lead edges of doors including lock area and single pile weatherstripping between carrier and header, on lead stiles of sidelights and pivot door stiles.
- I. Thumb Turn: Locate on interior according to NFPA 101.

2.4 OPERATORS

- A. Provide door operators of size as recommended by manufacturer for door size, weight, and movement; for condition of exposure; overhead concealed; jamb-mounted, hand wave sensor for opening; 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 back-check and latching.
 - c. Adjustable braking.
 - d. Adjustable hold-open time between 0 and 30 seconds.
 - e. Obstruction recycle.
 - f. On/Off switch to control electric power to operator.
 - g. Energy conservation switch that reduces door-opening width.
 - h. Variable rate open/closed speed control.
 - i. Closed loop speed control with active braking and acceleration.
 - j. Variable obstruction recycle time delay.
 - k. Self adjusting stop position.
 - l. Self adjusting closing compression force.
 - m. Optional Switch to open/Switch to close operation.
 - 3. Mounting: Concealed.
 - 4. Drive System: Synchronous belt type.
- C. Electrical: 120 VAC, 5 amps.
- D. Electrical Control System: Electrical control system shall include a microprocessor controller and position encoder. The encoder shall monitor revolutions of the operator shaft and send signals to microprocessor controller to define door position and speed. A single controller shall be capable of controlling up to 2 operators per entrance system.
- E. Life Cycle Data Counter: The microprocessor control shall incorporate a non-re-settable counter to track door operation cycles.
- F. Controller Protection: The microprocessor controller shall incorporate the following features:
 - 1. Automatic Reset upon Power Up
 - 2. Fuse Protection
 - 3. Electronic Surge Protection
 - 4. Internal Power Supply Protection.
 - 5. Software protection in the case of software malfunction.

- G. Soft Start/Stop: A "soft-start" "soft-stop" motor driving circuit shall be provided for smooth normal opening and recycling.
- H. Safety Search Circuitry: 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.
- I. Programmable Controller: Microprocessor controller shall be programmable and shall be designed for connection to a local configuration tool. Local configuration tool shall be software driven and shall be utilized via Palm® handheld interface or similar device. The following parameters shall be capable of being adjusted via the configuration tool.
 - 1. Operating speeds and forces as required to meet ANSI/BHMA A156.10.
 - 2. Adjustable and variable features as specified in 2.05, B., 2.
 - 3. Reduced opening position.
 - 4. Firmware update.
 - 5. Trouble Shooting
 - a. I/O Status.
 - b. Electrical component monitoring including parameter summary.
 - 6. Entrance profile copy/paste.
- J. Motion Sensors: Motion sensors shall be mounted on each side of door header to detect pedestrians in the activating zone, and to provide a signal to open doors in accordance with ANSI/BHMA A156.10. Units shall be programmable for bi-directional or uni-directional operation and shall incorporate K-band microwave frequency to detect all motion in both directions.
- K. Presence Sensors: Presence sensors shall be provided to sense people or objects in the threshold safety zone in accordance with ANSI/BHMA A156.10. Units shall be self-contained, fully adjustable, and shall function accordingly with motion sensors provided. The sensor shall be enabled simultaneously with the door-opening signal and shall emit an elliptical shaped infrared presence zone, centered on the doorway threshold line. Presence sensors shall be capable of selectively retuning to adjust for objects which may enter the safety zone; tuning out, or disregarding, the presence of small nuisance objects and not tuning out large objects regardless of the time the object is present in the safety zone. The door shall close only after all sensors detect a clear surveillance field.
- L. 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.
- M. Control Switch: Provide manufacturer's standard header mounted rocker switches to allow for full control of the automatic entrance door. Controls to include, but are not limited to:
 - 1. Power On/Off
 - 2. Reduced Opening
 - 3. Open/Closed/Automatic

2.5 FABRICATION

- A. Fabricate door assembly to allow for minimum clearances and shim spacing around perimeter of assemblies to enable proper installation.
- B. Door Stiles and Rails: Extruded aluminum, narrow - 2-1/8" stiles; 1-3/4" deep; 10" bottom rails; fabricated to accommodate 1/4 inch glass except provide insulated glass assembly with space between glass panes as required to accommodate integral blinds where indicated.
- C. Door Jambs: Aluminum, 1 3/4" deep by 4" wide.
- D. Glass Stops: Formed metal to match cladding, sloped for wash. Form weather stop flange.
- E. Provide units with perimeter seals as required to meet indicated performance requirements.
- F. Factory assemble, adjust and test operator components in header. Provide corner block type construction with 3/16" steel backup plate construction, mechanically secured with minimum of four hardened steel screws. Sash shall consist of snap-in glass stops, snap-in glazing beads and vinyl gaskets.
- G. Accurately and rigidly fit joints and corners to assure against racking failure.
- H. Ensure joints and connections are flush, hairline and waterproof.
- I. Header cover shall have a continuous self-locking hinge which allows it to open approximately flush with top of header for service access.
- J. Apply one coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.
- K. Form sills in one piece. Slope sills for wash. Provide means of preventing derailing of doors for continuous length of door travel.
- L. Overhead Track: Provide nylon covered aluminum track that can be removed. Sliding doors shall have two separate tracks for sliding panel travel.
- M. Size units to allow for tolerances of rough framed openings, clearances and shim spacing around perimeter of assemblies.
- N. Factory Glazed Units: Install glass in fixed and sliding units according to manufacturer's standard method. Fabricate sliding aluminum-framed glass doors that are reglazable without dismantling panel framing.
- O. Provide a label on equipment listing company name and phone number for a service.
- P. Door Operators: Factory fabricated and installed in headers, including adjusting and testing.

2.6 FINISHES

- A. Class II Natural Anodized Finish: AAMA 611-98; AA-M10-C22-A31 unspecified mechanical finish; medium matte chemical finish; 0.4 mil minimum thick clear anodic coating; anti-microbial finish.

PART 3 EXECUTION

3.1 INSPECTION

- A. Verify wall openings and adjoining air and vapor seal materials are ready to receive work of this Section.
- B. Beginning of installation means acceptance of existing conditions.

3.2 PREPARATION

- A. Prepare opening to permit correct installation of door unit.

3.3 INSTALLATION

- A. Install doors, frames, glazing and hardware according to manufacturer's instructions. Set doors level, plumb, and true to line, without warp or rack of frames and panels. Provide proper support and anchor securely in place.
- B. Coordinate attachment and seal of air and vapor barrier materials. Install sill flashings.
- C. Install perimeter type sealant, backing materials and installation requirements according to Section 079200.
- D. Door Operators: Connect door operators to electrical power distribution system as specified in Division 26 Sections.

3.4 TOLERANCES

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Variation from Plumb: 1/16 inch maximum.
- C. Variation from Level: 1/16 inch maximum.
- D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 foot straight edge.

3.5 ADJUSTING

- A. Adjust operating panels, screens, and hardware to provide a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

3.6 CLEANING

- A. Clean aluminum surfaces immediately after installing sliding aluminum-framed glass doors. Avoid damaging protective coatings and finishes. Remove excess glazing and sealants, dirt, and other substances.
- B. Clean glass of factory-glazed doors immediately after installing sliding aluminum-framed glass doors. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels from glass surfaces.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the Construction Period.

3.7 PROTECTION

- A. Protect sliding aluminum-framed glass doors from damage or deterioration until time of Substantial Completion.
- B. Do not permit continuing construction activities near unprotected finish surfaces.

END OF SECTION