

## **SECTION 08 42 29.23 (08460)**

### **ARCHITECTURAL SPECIFICATIONS – record-usa SERIES 5100 AUTOMATIC SLIDING DOOR SYSTEMS**

#### **PART 1: GENERAL**

##### **1.01 SUMMARY**

A. WORK INCLUDED: Furnish and install automatic aluminum door system(s), factory fabricated. Door packages shall be complete and without damage or defect.

B. RELATED WORK:

1. Section 07900 – Joint Sealers
2. Section 08400 – Entrances and Storefronts
3. Section 08700 – Hardware
4. Section 08800 – Glazing
5. Section 16000 – Electrical

##### **1.02 RELATED WORK**

The following exclusions are covered in Section(s) \_\_\_\_\_:

1. Preparation of the plumb and square masonry opening
2. Floor preparation
3. Electrical supply and connection (dedicated 120 VAC, 15 amp circuit to each operator/header)

##### **1.03 SUBMITTALS**

- A. PRODUCT DATA: Provide complete product and installation documentation as provided by the manufacturer.
- B. SHOP DRAWINGS: Provide details of door construction including profiles, dimensioned layout, and assembly including finish, glazing, electrical, and anchoring requirements.
- C. Provide manufacturer's Warranty documentation and Owner's Manual.

##### **1.04 QUALITY ASSURANCE**

A. Manufacturer must have a minimum of five (5) years experience in the fabrication of aluminum-and-glass door assembly similar to those specified. Door packages shall be warranted against defect in material and workmanship for a period of one year from the date of installation. Installation shall be approved by an AAADM certified technician.

B. The record-usa 5100 series shall be self certified to meet performance design criteria of the following standards.

1. ANSI/BHMA 156.10
2. NFPA 101
3. IBC
4. ICBO
5. BOCA

C. Door shall be obtained solely through an authorized trained and factory certified automatic door provider. Consult record-usa (800) 438-1937 for the current listing.

## 1.05 REFERENCES

- A. UNDERWRITERS LABORATORIES (UL):
  - 1. UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
- B. American National Standards Institute (ANSI) / Builders' Hardware Manufacturers Association (BHMA):
  - 1. ANSI/BHMA A156.10: Standard for Power Operated Pedestrian Doors.
- C. American Society for Testing and Materials (ASTM):
  - 1. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- D. American Association of Automatic Door Manufacturers (AAADM)
- E. National Fire Protection Association (NFPA):
  - 1. NFPA 101 – Life Safety Code.
  - 2. NFPA 70 – National Electric Code.
- F. Building Officials and Code Administrators International (BOCA), 1999:
- G. International Building Code 2012
- H. National Association of Architectural Metal Manufacturers (NAAMM):
  - 1. Metal Finishes Manual for Architectural and Metal Products.
- I. American Architectural Manufacturers Association (AAMA):
  - 1. AAMA 609 and 610-02- Clear Anodic Finishes for Architectural Aluminum.

## 1.06 PERFORMANCE REQUIREMENTS

- A. Temperature change suitable:
  - 1. minus 30 degree Fahrenheit (minus 34 degree Celsius) to
  - 2. 130 degree Fahrenheit (54 degree Celsius)
- B. Breakaway door requirements of not more than 50 lbf (222 N) provided power fails and no more than 15 lbf (67 N) to open door to specified minimum required width.
- C. Closing force of no more than 30 lbf (133 N) required preventing the door from closing at all times.

## 1.07 ON SITE FIELD CONDITIONS REQUIRED PRIOR TO INSTALLATION

- A. Approved Shop drawings must be referenced and confirmed by the General Contractor before fabrication.
- B. Opening must be verified to be plumb, straight and secure.
- C. It is the duty of the General Contractor to make door installer aware of any non-conforming conditions or equipment as indicated on the shop drawings.
- D. General Contractor is required to coordinate the layout and installation of the automatic door equipment connection to power supplies.

## 1.08 WARRANTY

Door packages shall be warranted against defect in material and workmanship for a period of two years from the date of installation.

## PART 2: PRODUCT

### 2.01 MANUFACTURER

record-usa  
Monroe, North Carolina, USA  
(800) 438-1937

### 2.02 AUTOMATIC SLIDING DOOR DESIGN

A. Sliding door Package: The manufacturer's sliding door package shall consist of the following materials in order to make a complete package installation: framing, flush mounted header (mounted between jambs), sliding door panel(s), stationary panel(s), operators (belt drive only-linear rod not accepted), activation and safety devices, carrier assemblies, noise isolating roller track, threshold, and guide tracks (*to match threshold dimensions on full breakout units*). Traffic patterns to be determined by owner and set by installer using record-usa exclusive S.M.A.R.T. panel per application or desire..

#### B. Definitions:

1. SO panel: stationary sidelite that has the capabilities to swing away in case of emergency egress
2. SX panel: sliding panel that has the capabilities to swing away in case of emergency egress
3. O panel: stationary sidelite that does NOT have the capability to swing away
4. Single slide: package will have one (1) stationary panel and one (1) sliding panel sliding over the stationary panel to create the clear door opening width
5. Bi-Parting: package will have two (2) stationary panels and two (2) sliding panels sliding away from one another overlapping stationary panels to create the clear door opening width

#### C. Configurations:

1. Full Breakout: Sliding and stationary sidelite panel(s) ALL swing clear for means of emergency egress
  - a. Possible configurations are as follows (using definition above):

- b. Single slide: SO-SX and SX-SO
- c. Bi-parting: SO-SX-SX-SO
- 2. Fixed sidelite: Only sliding panel swings away for emergency egress sidelite will NOT.
  - a. Possible configurations are as follows:
  - b. Single slide: O-SX and SX-O
  - c. Bi-parting: O-SX-SX-O

Other configurations available, please consult manufacturer.

#### D. Materials:

- 1. Framing, header, and door panels made of extruded aluminum by US supplier.
- 2. Mohair pile weather stripping at all vertical surfaces on door panels

### 2.03 ALUMINUM DOORS AND FRAMES

- A. Aluminum: Alloy and temper recommended by manufacturer for type of use and specified finish.
  - 1. Header, frames, stiles and rails: 6063-T5
  - 2. Extruded bars, rods, profiles and tubes: ASTM B221
  - 3. Sheet and plate: ASTM B209
  
- B. Framing Members: Shall be manufacturer's standard extruded aluminum
  - 1. 1-3/4" x 4-1/2" (44mm x 114mm), optional framing members include:
    - a. [1" x 4-1/2" (25mm x 114mm)]
    - b. [4-1/2" x 4-1/2" (114mm x 114mm)]
    - c. [1-3/4" x 6 1/2" (44mm x 152mm)]
    - d. [1" x 6-1/2" (25mm x 165mm)]
  - 2. Framing Option: Transom of size and type as indicated on drawings
  
- C. Doors and Sidelites: Shall be 1-3/4" (44mm) thick extruded aluminum stiles and rails. Stiles and rails shall be mechanically fastened with mortise and tenon blocks.
  - 1. Stile Design: Narrow stile, 2" (51mm), optional designs include:
    - a. [Medium stile, 3-1/2" (89mm)]
    - b. [Wide stile, 5" (127mm)]
    - c. Overlapping stiles shall be provided with interlocks to prevent separation of panels. Interlocks to be adjusted to maintain security when door is in the closed and locked position. Notching of interlocking stiles not acceptable.
  - 2. Horizontal Rail Design (Muntin Bar), 1-1/2" (38.1mm), optional designs include:
    - a. [2-1/2" (63.5mm)]
    - b. [3" (76.2mm)]
    - c. [3-1/2" (89mm)]
    - d. [4" (102mm)]
    - e. [5" (127mm)]
    - f. [6" (152mm)]
  - 3. Bottom Rail Design: 3-1/2" (89mm), optional designs include:
    - a. [6" (152mm)]
    - b. [10" (254mm)]

- D. Glazing Material: ANSI Z97.1
1. Doors and Sidelites: Doors and sidelites shall be capable of accepting the same thickness of glass for fixed sidelite and full break-out units.
  2. Exterior Glass Stop Extrusion: Doors and sidelites shall be provided with non-removable security glass stops.
  3. Glazing Prep: Standard glazing prep to be for ¼" (6.4mm) glass, optional glazing prep includes:
    - a. 1" (25.4mm) glazing prep
    - b. ¾" (19mm) glazing prep
    - c. 5/8" (16mm) glazing prep
    - d. 9/16" (14mm) glazing prep
    - e. ½" (12.7mm) glazing prep
    - f. 3/8" (9.5mm) glazing prep
- E. Break-out Panels: Panels can swing out 90 degrees at any point in the slide movement to provide instant egress per NFPA 101. Required force shall to "break-out" panels shall not exceed 50lbf (222N) applied to the lock stile.
1. Break-out door panels and break-out sidelites shall utilize a spring-load adjustable ball detent. Additional option for break-out panel:
    - a. Concealed Hydraulic Closer: Standard for fixed side-lite door packages, optional for full break-out.
- F. Header: Shall be 4-1/2" wide x 7" tall (114mm X 178mm). Fabricated from extruded aluminum and extending the full width of sliding door unit between jambs. Headers shall have removable access panel for service of door operator and control.
1. Mounting: Header mounts flush with 4-1/2" (114mm) framing
  2. Capacity: Capable of supporting doors up to 220lbs (100kg) per leaf spanning up to 16'-0" (4.9m) without intermediate supports.
- G. Overhead Roller Track: Shall be continuous anodized aluminum. Track shall be replaceable.
1. Composition: Anodized aluminum, lined with rubber compound
  2. *Mounting*: Captured within extruded channel in header
  3. *Isolation*: Neoprene isolation member to reduce noise and vibration
  4. Warranty: Lifetime

#### **2.04 MOTOR GEARBOX ASSEMBLY**

A. Door movement: Shall be driven by a sealed, low voltage class II, 1/8 horsepower 30v DC motor and gearbox and nylon reinforced drive belt. The motor current shall be limited to a maximum of 3 amps. The sealed motor gearbox assembly shall be capable of driving door leaves of up to 220 lbs.(100kg) A second motor gearbox can be utilized on the same application giving a capability of moving door panels weighing up to 450 lbs. The motor gearbox assembly shall be mounted directly to the header extrusion by means of three (3) each M5 x ¼" threaded standoff bolts.

#### **2.05 DOOR CARRIER ASSEMBLY AND TRACK**

A. Each moving door leaf shall be supported by two door carrier assemblies, each carrier having a minimum of two supporting rollers and one adjustable "anti-riser" roller. Each supporting roller shall be 1 ¾" (44mm) in diameter. Each supporting roller shall be high performance rollers with sealed bearings. The carrier assemblies shall move along a two

part, replaceable track assembly. A convex aluminum extruded track allowing the door panels to travel along a horizontal plane shall be mounted on the roller track damper, which will be made of rubber. The primary purpose of the damper is to reduce the amount of mechanical noise generated. Track shall be warranted for the lifetime of the door.

## **2.06 MASTER CONTROL**

The master control shall be capable of being programmed by either the S.M.A.R.T. panel installed as standard on all 5100 series sliding doors or by a hand held programmer. Both the S.M.A.R.T. panel and the hand held programmer will be capable of programming all swinging, sliding and folding doors within the record product offering. The master control shall have only digitally adjustable parameters (for repeatability purposes, potentiometers as a method of setting parameters shall not be allowed).

The master control shall be a microprocessor capable of being programming, but not limited to control settings:

1. Opening and Closing speeds
2. Acceleration
3. Door open time delay
4. Remote door open time delay
5. Partial opening size
6. Reverse adjust sensitivity
7. Fire alarm signals
8. Directional traffic flow
9. Locking

The microprocessor shall also have the capability of, but not limited to:

Detect faults and deal with them according to method of programming including sending data to the S.M.A.R.T. panel, indicating that there is a fault, what the fault is from one of the 90+ stored error screens, it will also provide a user programmed telephone contact on the display. Updates to the software can be uploaded and updated, using the hand held programmer

## **2.07 MOTION AND PRESENCE SENSORS**

A. The record 5100 sliding door system shall include the following:

1. Combined Activation and Safety Sensor System: Shall be 24 VDC, class II circuit; and shall be adjusted and installed in accordance with ANSI/BHMA A156.10. The installation shall be performed by an AAADM Certified Technician with a minimum of one (1) year in the service related field.
  1. Hold-Open Beams: Two infrared photoelectric beams to be mounted in vertical rails of the sidelite or in the vertical jamb, with the photoelectric beams wired directly to the record 5100 micro processor. The photo eye beams are mounted at 24" and 48" respectively above finished floor. Breaking either beam will cause a closing door to re-open and remain open until the path between the emitters and receivers is cleared. Once cleared, the signal is reinstated and the door will close and be fully functional. In the full closed position, the beams will not open the door.

## 2.08 HARDWARE

- A. Provide units in sizes and types recommended by automatic entrance door and hardware manufacturers for entrances and applications indicated.
- B. ANSI A156.5, Grade 1, 2-Point Locking provided and installed in the strike rail. Manufacturer's standard hook bolt lock operated by exterior cylinder and interior thumb turn.
  - 1. Hook Bolt Latch: Laminated steel, latching into jamb or strike rail
  - 2. Two-Point Locking: Provide locking device that mechanically engages the adjacent strike rail or jamb and extends a flush bolt into the overhead carriage assembly. Deadbolt locking options include the following:
    - a. Three-Point Locking for bi-parting doors
    - b. Lock indicator- Open/Locked
    - c. Adams-Rite 4550 MS Deadbolt Lever
- C. Flush Panic Exit Device, recessed in 3 1/2" muntin bar
- D. S.M.A.R.T. Panel (Self Monitoring Accurate Reporting Technology): Provide manufacturer's standard jamb mounted control panel for complete control and reporting of the automatic sliding door. Control panel capabilities include, but are not limited to the following:
  - 1. Powered Operation On/Off
  - 2. Full Open/Partial Open
  - 3. Automatic Operation/Exit Only/Open
  - 4. Manual and Locked Modes
  - 5. Daily Safety Check Reminder
  - 6. Diagnostic Reporting
  - 7. Door Cycle Count
  - 8. Planned Maintenance Reminders
- E. Weather Stripping to be along the perimeter all door panels and side-lites to reduce energy loss. Standard weather stripping includes the following:
  - 1. Adjustable nylon sweep in the bottom of sliding door(s)
  - 2. Double pile weather stripping on:
    - a. Lock/Strike stile of sliding door(s)
    - b. Pivot stile of breakout sidelite(s)
  - 3. Single pile weather stripping on:
    - a. Between the carriage assembly and header
    - b. Lead stile of sidelite(s) with concealed fabric seal
    - c. Pivot stile of sliding door(s) with concealed fabric seal

## 2.09 ELECTRICAL REQUIREMENTS

- A. The Automatic sliding door shall consume no more than 100W of electricity at full load power.
- B. Section 16 Contractor to provide 120V, 1 phase, 5 amp dedicated circuit per automatic sliding entrance
- C. 120V service to be roughed into header of sliding door package.
- D. Electrical rough in to be finished at time of installation

## **2.10 FABRICATION**

Factory builds, fabricates, and assembles automatic door components by design.  
To comply with all building codes applicable to design standards.

- A. Door miscellaneous hardware: Factory assembled to design specific projects.
- B. Door Closers: Integrated support for hydraulic closers in both SX (slide) panels and SO (sidelite) breakout panels. Concealed within the top rail, door closers are available when specified, to ensure the door closes and remains operable after emergency breakout egress.

## **2.11 ALUMINUM FINISHES (FOR ALL EXPOSED FINISHES)**

- A. Comply with NAAMM Metal Finish Manual for Architectural and Metal Products for applying and designing finishes. Finish designations beginning with AA comply with a system established by Aluminum Associations for designing finishes. Finishes shall be one of the following:
  1. Clear: Architectural Class II Clear Anodized Coating (AA-MI2C22A31)
  2. Dark Bronze: Architectural Class I Anodized Coating (AA-MI2C22A44)Optional Finishes Include the Following:
  3. Clear: Architectural Class I Clear Anodized
  4. Black: Architectural Class I Anodized Coating
  5. Medium Bronze: Architectural Class I Anodized Coating
  6. Light Bronze: Architectural Class I Anodized Coating
  7. Champagne: Architectural Class I Anodized Coating
  8. Paint Coating : Kynar or Powder Coat to match Kynar Colors, standard or custom colors
  9. Clad with stainless steel or brass alloy, brushed or polished finish

## **PART 3: EXECUTION**

### **3.01 INSPECTION**

Inspect frame opening for correct size, plumb and square and level floor for safe and reliable performance. Provide written notification to the appropriate personnel of conditions not acceptable to the installer and/or manufacturer. Proceed with installation only after necessary corrections are made by the general contractor to insure a suitable opening.

### **3.02 INSTALLATION**

Install sliding door unit plumb, square, and level in properly prepared and supported opening, using specified fasteners, as required by installation instructions and as detailed on the shop drawings.

### **3.03 INSTRUCTION**

Following the installation and final adjustments, the installer shall fully instruct the facility manager as to correct operating procedure and safety requirements of the sliding door package.

### **3.04 FINAL CLEANUP**

After installation and adjustment for smooth, reliable operation, clean the door package and remove all surplus material, equipment, and debris incidental to this work.