

## SECTION 08352 FOLDING DOORS

### AMSTEL AS800PG DIVIDER FIRE

THREE PART SHORT FORM SPECIFICATIONS (CSI)

#### **PART 1 GENERAL**

##### 1.1 SUMMARY

- A. Section Includes: Metal, electrically operated, horizontal sliding, accordion folding fire doors with ULC and FM Fire and SmokeShield® leakage rated assembly labels.
- B. Related Sections:
  - 1. 05 50 00 Metal Fabrications. Structural support for track.
  - 2. 06 10 00 Rough Carpentry: All headers, support structures, jambs, field painting, blocking, trim and pockets shall be furnished and installed by others.
  - 3. 08 31 00 Access Doors and Panels.
  - 4. 08 70 00 Hardware.
  - 5. 09 91 00 Painting - Field painting of all door panels, lead posts, track, soffit, chain guide and wall mounted striker posts.
  - 6. Division 26. Electrical wiring and conduit, fuses, disconnect switches, connection of operator to power supply, installation of control station and wiring, and connection to alarm systems.

##### 1.2 SYSTEM DESCRIPTION

- A. Performance Requirements:
    - 1. Provide doors with Underwriters' Laboratories, Inc. and Factory Mutual labels for the fire rating classification, [3 hr] [1 1/2 hr] [1 hr] [3/4 hr] [1/2 hr] [20 minutes].
    - 2. Provide doors with Underwriters' Laboratories, Inc. and Factory Mutual labels for "Leakage Rated Assembly" or "S" label.
      - a. Comply with NFPA 105 air leakage requirements.
      - b. Fire doors shall have air leakage of less than 3 cubic feet per square foot at 0.1 inch of water column pressure when tested in accordance with UL 1784 with an artificial bottom seal.
- OR
- b. Fire doors at the point of access to an elevator shall have air leakage of less than 3 cubic feet per square foot at 0.1 inch of water column pressure when tested in accordance with UL 1784 without an artificial bottom seal.
  - 3. Provide horizontal sliding fire doors that are recognized by the International Code Council-Evaluation Services (ICC-ES) as a permitted component in a means of egress.
  - 4. Horizontal sliding fire door operating systems are to be listed as a complete assembly per UL325.
  - 5. IAS Testing Laboratory to provide proof of testing to the performance requirements of the IBC, NFPA 80 and to the requirements for electrical installations per the NEC.
  - 6. IAS Testing Laboratory to provide proof of successful product endurance testing of not less than 10,000 complete close/open cycles of a unit installed in accordance with required field conditions that covers an opening of not less than 25' wide and 8' high.

##### 1.3 SUBMITTALS

- A. Reference Section 01 33 00 Submittal Procedures; submit the following items:
  - 1. Product Data.

2. Shop Drawings: Show interface with adjacent work. Indicate required stacking depth, pocket width, and height from finished floor to bottom side of header. Show installation details and layout.
3. Quality Assurance/Control Submittals:
  - a. Product to be labeled with ICC-ES evaluation report number as a permitted component in a means of egress.
  - b. Provide proof of manufacturer ISO 9001:2008 registration.
  - c. Provide manufacturer's installation instructions.
4. Closeout Submittals:
  - a. Operation and Maintenance Manual.
  - b. Certificate stating that installed materials comply with this specification.

#### 1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: ISO 9001:2008 registered and a minimum of five years experience in producing fire and smoke control products.
- B. Installation shall be performed by manufacturer trained or authorized personnel according to manufacturer's installation instructions.
- C. Fire doors shall be listed by Underwriters Laboratories and Factory Mutual for ratings as indicated, when tested in accordance with the requirements of UL 10B & ASTM E-2074.
- D. Fire door operating systems are to be listed as a complete assembly per UL325.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver to the job site in manufacturer's original, unopened package.
- B. Reference Section 01 66 00 Product Storage and Handling Requirements.
- C. Follow manufacturer's instructions.

#### 1.6 COORDINATION BY GENERAL CONTRACTOR

- A. Coordinate the efforts of the various trades affected by the work of this section. Assure accurate installation of header, jamb, and trim. Provide field dimensions for fabrication. Supervise unloading and handling of materials.
- B. Permanent power shall be in-place and ready for final connection when fire doors are erected. Assure access to and proper clearance for motor operators.
- C. After testing the fire alarm system, automatic-closing fire doors shall be re-set to their original positions.
- D. Store boxes flat (not more than three high) in a dry area and protect from elements that may damage materials.

#### 1.7 WARRANTY

- A. Standard Warranty: Two years from date of shipment/installation against defects in material and workmanship.

- B. Maintenance: Submit for owner's consideration and acceptance of an annual testing and maintenance service agreement for installed products to comply with building code and NFPA 80 requirements.

## **PART 2 PRODUCTS**

### **2.1 MANUFACTURER**

- A. Manufacturer: Amstel Manufacturing, 128 Centre Street East, Richmond Hill, Ontario  
Tel: 1-800-663-6206, [www.amstel-doors.com](http://www.amstel-doors.com)
- B. Model: AS800PG
- C. Substitutions: Reference Section 01 25 13 Product Substitution Procedures.

### **2.2 MATERIALS**

- A. Accordion Folding Fire Door Construction
  1. Construction: Shall consist of two parallel, accordion-type walls of panels independently suspended from an interconnected double rail overhead track with no pantographs or internal connections except at the upright lead post.
  2. Door Panels: Each assembly to consist of continuous length, 4 ½" wide panels formed of 24 gauge commercial grade coated steel, corrugated for strength and resilience.
  3. Hinges: Continuous length, full height 24 gauge commercial grade coated steel hinges interconnect door panels.
  4. Upright Lead Post: Formed of 24 gauge commercial grade coated steel with finish to match door panels. Connect to door panels with specially formed sections. An internally mounted stabilizer bar support shall keep the lead posts vertical and in proper alignment during operation and insure tight fitting closure of the door.
  5. Wall Mounted Striker Post: Recessed 18 gauge coated cold rolled steel member that receives the lead post and is secured to the wall opposite the stacked door.
  6. Floating Jamb: 18 gauge aluminized steel floating jamb assembly that travels within the storage pocket and forms a seal at the pocket end of the door.
  7. Fully assembled and extended unit hanging weight shall be approximately 5.5 pounds per square foot.
- B. Suspension System

ALUMINUM TRACK IS AVAILABLE FOR STRAIGHT SLIDING UNITS TO 1 1/2 HOUR MAXIMUM RATING. SELECT FORMED STEEL TRACK WHEN DESIRED, WHEN REQUIRED BY LOCAL CODES AND WHEN CURVED TRACK OR A 3 HOUR RATING IS REQUIRED. A MINIMUM 5' RADIUS IS REQUIRED FOR ALL CURVED SECTIONS.

1. Track: Interconnected double rail [heavy duty extruded aluminum] [formed steel] track sections on 8" centers for attachment to overhead structural support system. Shape is designed for smooth running operation of the roller assemblies while prohibiting any opportunity for the rollers to derail.
2. Rollers: Each lead post/stabilizer bar assembly shall be suspended by a 12 wheel ball bearing trolley system. All panel rollers shall be a minimum of 1 1/16" diameter. Each individual panel shall be suspended using a forged cast hanger pin with removable nut and washer for ease of replacement.

- C. Perimeter Seals: Continuous extruded fire-rated sweeps and a fire liner attached to the top and bottom of the fire door form a smoke and draft seal.
- D. Finishes
  - 1. Door panels, hinges and upright posts: Coating process to include a flexible urethane primer followed by a high performance, medium gloss, baked-on polyester coating [in manufacturer's standard Platinum Gray color.] [. Color shall be selected from manufacturer available optional colors at additional cost and additional production lead-time.]
  - 2. Track: to be supplied [with a white baked-on powder coat finish.] [mill finish aluminum.] [with a color as selected from manufacturer available color options at an additional cost and additional production lead-time.]
  - 3. Perimeter Seals: Flat black.

## 2.3 OPTIONS

FACTORY SUPPLIED POCKET DOORS ARE AN AVAILABLE OPTION WITH ALL SLIDING FIRE DOOR UNITS UP TO 12' HEIGHT TO TOP OF TRACK. DELETE IF UNIT HEIGHT IS OVER 12' OR IF FACTORY SUPPLIED POCKET DOORS ARE NOT DESIRED. POCKET DOORS STOP AT UNDERSIDE OF HEADER SOFFIT REVEAL.

### A. Pocket Door(s):

- 1. Door
  - a. Material: A36 HR steel
  - b. Thickness: USS 12-gauge
  - c. Finish: Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils cured film thickness.

OR

- c. Finish: Phosphate treatment followed by a baked-on polyester powder coat, [color as selected from manufacturer's standard color range] [custom color as selected by Architect]; minimum 2.5 mils cured film thickness; ASTM-D-3363 pencil hardness: H or better.
  - d. Size: Designed to fit 18" pocket width: height to underside of soffit reveal.
- 2. Frame
  - a. Material: A36 HR steel
  - b. Thickness: USS 12-gauge steel
  - c. Finish: Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils cured film thickness.

OR

- c. Finish: Phosphate treatment followed by a baked-on polyester powder coat, [color as selected from manufacturer's standard color range] [custom color as selected by Architect]; minimum 2.5 mils cured film thickness; ASTM-D-3363 pencil hardness: H or better.
- 3. Hinges: 4" reversed spring action type
- 4. Magnetic catch provided to hold door in closed position.

THE FOLLOWING CONSTRUCTION FEATURE IS REQUIRED TO SATISFY UL 1784 TESTING WITHOUT AN ARTIFICIAL BOTTOM SEAL. NOT AVAILABLE FOR UNITS WITH CURVED TRACK. COORDINATE WITH SECTION 1.2-A2b. DELETE SECTION 2.3 OPTION "B" FOR CURVED TRACK UNITS OR IF NOT REQUIRED OR DESIRED.

- B. Non-Sway Construction Feature: Provide Fire Door with non-sway construction to limit the amount of curtain deflection due to notable air pressure differential on either side of the Fire Door opening.

## 2.4 OPERATION

- A. Motor Operator Assembly: Operating systems is to be listed as a complete assembly per UL325 and shall consist of DC gear-motor, limit switch control system, drive sprocket and clutch. Operating systems that require any special or proprietary equipment or service to maintain are not acceptable. The motor shall drive the fire door by means of a chain attached to the stabilizer bar trolley system. Motor operator assembly shall be located within a fire rated enclosure equal to the wall assembly rating. Motors shall be operated by DC power supplied from two (2) 12-volt maintenance-free batteries located in an electronic control box. Batteries shall be continuously charged by the building's electrical service and be automatically maintained at capacity. Fire doors may be operated manually in either the conventional or emergency mode. Electronic control box shall house the control panel, two (2) 12-volt maintenance-free batteries, power supply charger, and motor control relays. Control system is capable of remote status monitoring and remote operation. The control panel shall initiate a warning signal should any of the following conditions occur:
- Loss of AC power.
  - Low DC battery power.
  - Overload condition.
  - High limit temperature switch activation or malfunction.
1. Control Station: Flush mounted, "Open/Close" key switch with "Stop" push button; NEMA 1B.  
OR
  1. Control Station: Surface mounted, "Open/Close/Stop" push buttons; NEMA 1.  
OR
  1. Control Station: Surface mounted, "Open/Close" key switch with "Stop" push button; NEMA 3R.
- B. Leading Sensing Edge: Fire doors shall be equipped with a pressure sensitive, vertical leading edge such that each contact with an obstruction shall cause the door to stop and pause before attempting to re-close. Fire doors can be manually opened by pushing against the leading edge.
- C. Exit Hardware: Shall be located on both sides of the fire door near the leading member. Slight pressure on the hardware will cause the door to open approximately 54", pause for three seconds, then automatically close. The system shall be field programmable to allow automatic opening distances up to the entire opening width. The hardware can be used to open the door and move it back into the storage area during non alarm operation of door.
- D. Security Control: When activated, the Exit Hardware shall not respond when pressed unless there is an active emergency signal from the smoke or fire alarm system. The motor operator assembly will provide greater than 250 pounds of resistance to manual forced opening. (Note: At least one key switch will be required to utilize this feature.)
- E. Automatic Closing System: Shall consist of an electronic control box, motor operator assembly and leading sensing edge. Closing system shall be activated by the building's fire/smoke detection equipment and automatically close the fire doors. For additional protection, if the door is in the closed position and the temperature reaches 470° F on either side of the opening, door mounted high limit sensors will prevent Exit Hardware opening activation.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine header substrates upon which the accordion folding metal fire doors will be installed and verify that conditions are in accordance with approved shop drawings. Openings shall be prepared to

the dimensions specified and be plumb and level. Header shall be leveled with the finished floor to within +/- 1/4" (.25") tolerance over the entire length of the opening.

- B. Upon inspection of prepared opening, coordinate immediately with responsible entity to perform corrective work on unsatisfactory substrates and header, floor or sill levels.
- C. Commencement of work by installer is considered acceptance of substrate.

### 3.2 INSTALLATION

- A. Install accordion folding metal fire doors in accordance with manufacturer's printed instructions for clearances and attachment.
- B. Upon completion of the installation, the General Contractor shall protect the fire door units from damage and replace or repair subsequent damage so that the units are acceptable to the architect, at no additional cost to the owner.

### 3.3 ADJUSTING

- A. Following completion of installation, including related work by others, test and adjust accordion fire doors for ease of operation.

### 3.4 FIELD QUALITY CONTROL

- A. Site Test: Test fire doors for normal operation and automatic closing. Coordinate with building owner representative to witness and sign Automatic Closing Test Form.

### 3.5 CLEANING

- A. Clean surfaces soiled by work as recommended by manufacturer.
- B. Remove surplus materials and debris from the site.

### 3.6 DEMONSTRATION

- A. Demonstrate proper operation to Owner's Representative.
- B. Instruct Owner's Representative in maintenance procedures.