SECTION 083513 - ACCORDION FOLDING FIRE DOORS

PART 1 GENERAL

1.01 SUMMARY OF WORK

A. Model: FireGuard™ Compressed Stack (CS)

B. Division 0 and Division 1, as indexed, apply to this section.

C. Furnish and install all horizontal sliding, accordion folding fire rated doors shown on the drawings and specified herein.

1.02 RELATED SECTIONS

A. All headers, support structures, surrounding insulation, jambs, storage pockets, pocket doors, access doors, blocking and trim shall be furnished and installed by other sections.

B. All electrical wire, wiring, conduit, and electrical boxes shall be furnished and installed by electrical section.

C. Drilling/placement of anchorage points into pre or post tensioned decks, welding/punching/drilling steel members and all drywall work.

D. All track, soffit, chain guide and wall mounted striker posts shall be painted by Section 09900. Color shall be selected by the architect.

1.03 QUALITY ASSURANCE

A. Installation shall be performed by factory trained and certified installers with a minimum of three years' experience installing accordion-type fire doors.

B. Fire doors shall be listed by Underwriters Laboratories for ratings as indicated, when tested in accordance with the requirements of UL 10B and NFPA 252.

C. Automatic closing system shall be listed by Underwriters Laboratories in accordance with the requirements of UL864 and be listed for use with door assembly in compliance with NFPA 80, Chapter 9.

D. Fire doors used for smoke and draft control shall bear the "S" mark on the fire door label and shall have an air leakage of less than 3 ft3/ft2 at 0.1 inch of water column pressure when tested in accordance with UL 1784 with an artificial bottom seal.

E. Fire doors used at the point of access to an elevator shall bear the "E" mark on the fire door label and shall have an air leakage of less than 3 ft3/ft2 at 0.1 inch of water column pressure when tested in accordance with UL 1784 without an artificial bottom seal.

F. Fire doors shall be capable of resisting an air pressure differential up to .05 inches of water column.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's technical literature; include UL listing data.

C. Shop Drawings: Indicate construction and installation details and dimensions, including layout, electrical requirements, required stacking depth, height of header above finished floor, and requirements for anchorage and support of each door.

D. Operation and Maintenance Data: Operating procedures, troubleshooting and repair methods, and wiring diagrams.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver to the job site in manufacturer's original, unopened package.

B. Store products in a protected dry location. Replace damaged materials on-site at no cost to owner.

1.06 COORDINATION BY GENERAL CONTRACTOR

A. Coordinate with the following:

1. Fire Alarm system.

2. Electrical.

3. Floor and ceiling finish.

B. Assure accurate installation of header, jamb, and trim. Provide field dimensions for fabrication. Supervise unloading and handling of materials.

C. Store boxes flat (not more than three high) in a protected dry area. Replace damaged materials at no cost to owner.

D. 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.

E. After testing the fire alarm system, automatic-closing fire doors shall be re-set to the original position. Replace or repair damaged fire doors at no additional cost to the owner.

1.07 WARRANTY

A. Materials and installation shall be warranted against defects in workmanship for a period of one (1) year from the date of substantial completion.

PART 2 PRODUCTS

2.01 MANUFACTURER AND MODEL

A. Acceptable Manufacturer:

1. Won-Door Corp., 1865 South 3480 West Salt Lake City, UT, Phone: (800) 453-8494.
2. Approved equal.

B. Horizontal sliding accordion folding fire doors shall be Won-Door FireGuard model FG 60 minute as manufactured by Won-Door Corporation, Salt Lake City, UT.

C. Products of other manufacturers demonstrating complete compliance with each of the fire rating and performance criteria of the product specified will be considered for approval. Written requests for substitutions will be considered by the architect up to ten days prior to the bid date.

2.02 ACCORDION FIRE DOORS - GENERAL

A. Provide electrically powered self-closing fire doors of configurations indicated on the drawings.

B. Fire Rating: Fire doors shall be listed by Underwriters Laboratory as special purpose fire doors having a 60-minute fire-resistive rating in accordance with the requirements of UL 10B and NFPA 252.

C. Closing and Opening Operation: Automatic Closing System including motor operator and releasing devices shall be a Microprocessor-based system rated to UL864 (Releasing Device Control Unit) and shall commence closing upon activation by fire alarm system and/or by low battery charge.

1. Obstruction Detection: Contact with an obstruction shall cause the door to stop, reverse enough to remove pressure on the leading edge, pause, and then re-close when in an alarm condition.

2. While the door is opening under motor power, constant pressure to the leading edge in the direction of opening shall cause the door to continue to open until the leading edge is released. This is termed motor-assisted opening.

3. Constant pressure to the leading edge while not under motor power shall prevent motor operation and allow the door to be opened manually.

D. Exit Hardware Operation: Provide fire exit hardware on both sides of door.

1. In emergency mode, a slight pressure on the hardware will cause the door to open a minimum of 32 inches, pause for 3 seconds, and then automatically close.

2. The open distance shall be field programmable, up to the entire opening width, if the local authority requires an opening larger than 32 inches.

3. The pause before re-close shall be field programmable, up to 30 seconds, if the local authority requires a longer pause time.

4. The exit hardware shall have the ability when not in the emergency (fire) mode to be used to open the door and move it back into the storage pocket.

2.03 COMPONENTS

A. Door Construction: Two parallel, accordion-type walls of panels independently suspended with no floor tracks, pantographs, or interconnections except at the lead-post.

1. Panels: 24 gauge steel, V-grooved; Modular design; Capable of in-place repair.

2. Perimeter Seals: shall consist of continuous extruded vinyl sweeps attached to the top and bottom of the fire door to form a smoke and draft seal.

3. Hanging Weight: 5.5 pounds per sq. ft. when extended across the opening.

4. Finish: All steel parts factory-applied enamel.

5. Color: Manufacturer's standard platinum.

B. Suspension System: Two tracks, on 8-inch centers, attached to overhead structural support.

1. Tracks: 14 gauge cold rolled steel or .125 aluminum.

2. Panel Hangers: Every other panel individually suspended from a steel hanger pin and a 1/4-inch ball bearing roller.

3. Lead Post Hangers: 16-gauge steel structural tube frame with 18-gauge steel preformed cover. The lead post shall function as an integrated cover panel over the storage pocket opening when the fire door is in the open position.

C. Power Supply: 12-volt maintenance-free DC battery, automatically maintained at capacity by continuous charger, 120 V AC.

D. Automatic Closing System shall be listed to UL864 including capability to send and receive signals from the Fire Control Panel, and shall consist of the following:

1. Microprocessor Based Electronic Control box with the ability to:

a. Monitor dual power sources continually for peak performance including

1) Detect a missing battery, bad battery, or low battery condition

2) Detect if the charging circuit is bad

3) Detect fuse failures

4) Detect high or low AC conditions

b. Monitor the health of the drive train.

c. Monitor inputs including sticky door block, exit hardware, patron hardware, and key switches.

d. Run a "watch dog" monitoring circuit which will force a software restart in the event of software hangs, including tracking number of resets for diagnostic purposes.

e. Withstand voltages up to 120 AC on the fire alarm input circuit without damage including the ability to indicate that the alarm circuit has not been wired as a dry contact, "no voltage" circuit when errant voltages are applied to the circuit.

f. Communicate with other microprocessors in the assembly via an internal buss system.

g. Indicate faults or supervised information both locally and at a remote location.

2. Motor Operator Assembly including: A DC gear motor, drive sprocket, clutch, and position sensors. The motor shall drive the fire door by means of a chain attached to a stabilizer bar trolley. The motor shall be rated for continuous use with unlimited cycle duty.

3. If a key switch is NOT used, a door control momentary rocker switch shall be mounted on one side of the door and shall function as follows:

a. Pressing the upper portion shall close the door and/or clear fault conditions.

b. Pressing the lower portion of the switch shall open the door and/or temporarily mute the local horn.

4. Leading Edge Obstruction Detector shall be pressure sensitive such that contact with an obstruction shall cause the door to stop, pause for 3 seconds, then re-close when in alarm mode. The obstruction detection system shall be fully functional at all times.

5. Exit Hardware shall be located on both sides of the fire door.

6. Doors installed at the point of access to an elevator ("E" label) shall include the following extras: track seals, anti-sway brackets every five feet or less across the opening, and foil tape between the panels and the smoke liner.

E. Header Assembly: shall be provided as an integrated part of the fire door, including a unitized track system, threaded rods, and mechanical attachment hardware.

F. Striker: Surface mounted striker jambs.

2.04 RELATED CONSTRUCTION

A. Track Support Construction: Provide supports attached to structure and mounting surface for tracks including drilling/placement of anchorage points into pre or post tensioned decks, welding/punching/drilling steel members, and all drywall work; comply with door manufacturer's instructions and recommendations.

B. Pocket Construction: Provide pocket for concealment of accordion door when open; comply with door manufacturer's instructions and recommendations.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that adjacent construction is suitable for installation of door.

B. Verify that electrical utilities have been installed and are accessible.

C. Verify that door opening is plumb, and header is level and of correct dimensions.

D. Notify Architect of any unacceptable conditions or varying dimensions.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions, shop drawings, and NFPA 80.

B. Install fire doors plumb and level.

3.03 ADJUSTING

A. Adjust door installation to provide uniform clearances and smooth, quiet, non-binding operation.

B. Test door closing functions under all anticipated conditions.

3.04 CLEANING

A. Clean surfaces using manufacturer's recommended means and methods.

3.05 PROTECTION

A. Protect installed work from damage.

3.06 STORAGE OF WASTE AND RECYLING

A. Store and recycle waste in accordance with Section 01 74 19 Construction Waste Management and Disposal.

END OF SECTION