



LTH2900, TUBULAR COMPOSITE SLIDING FIRE DOOR
CONSULT MANUFACTURER FOR ADDITIONAL OPTIONS OR MODIFICATIONS.

PART 1-GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.2 SUMMARY

- A. This section includes horizontal sliding fire door systems.
- B. Operation of horizontal sliding fire door systems may include overhead mounted electro-mechanical operators.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for each type of product specified consisting of manufacturer's technical Product Data and installation instructions for each type of door required, including data substantiating that products comply with requirements.
- C. Submittal Drawings showing fabrication and installation of sliding fire doors including plans, elevations, sections, details of components, hardware, operating mechanism, and attachments to the other units of Work. Include wiring diagrams for coordination with electrical trade.

1.4 QUALITY ASSURANCE

- A. Doors shall be designed to withstand external or internal horizontal wind loads of 20 pounds minimum per square foot. The maximum allowable deflection shall not exceed 1/120 of the span. Fiber stresses in main members shall be limited to 27,000 pounds per square inch. Steel frames shall be designed in accordance with the AISC "Steel Construction Manual".

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store delivered materials and equipment in dry locations with adequate ventilation, free from dust and water, and so as to permit access for inspection and handling.
- B. Handle materials carefully to prevent damage.

1.6 WARRANTY

- A. The door manufacturer shall provide a written guarantee against all defects in material and workmanship for a period of three (3) years from the date of acceptance.
- B. (Option) A five (5) year warranty.

PART 2-PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Single, bi-parting or tele-slide sliding fire doors shall be the LTH2900 Series composite fire door manufactured by Door Engineering and Manufacturing, LLC; 400 Cherry Street, Kasota, MN 56050, (800) 959-1352. Equal products by other manufacturers approved in advance.

2.2 MATERIALS

- A. Steel Sheets: Steel sheets of commercial quality, complying with ASTM A 1008A/ 1008M cold-rolled steel sheet.
- B. Hardware: Manufacturer's standard components, galvanized or zinc plate finished.

2.3 DOOR PANEL CONSTRUCTION

- C. Basis-of-Design Product: The drawings and specifications are based on the LTH2900 Series, Tubular Composite Horizontal Sliding Fire Door as manufactured by Door Engineering and Manufacturing, LLC; Kasota, MN.
- D. Doors shall bear the appropriate Underwriters Laboratories and Factory Mutual label for 4, 3, 1 ½ or ¾ hour (please indicate the label needed). Door carries a maximum temperature rise of 450° in 30 minutes. Sizes larger than 12' x 12' shall receive an oversized label from Underwriters Laboratories and Factory Mutual.
- E. Door thickness: Doors shall have a minimum nominal thickness of 2 1/8" or 4 1/8".
- F. Core: Fiberglass insulated, R on 2 1/8" = 7.7; 4 1/8" = 15.4
- G. Face Sheets: Steel sheet shall be a minimum of 18, 16 or 14 gauge cold rolled or A-60 galvanized steel.
- H. Interior Framing: The faces sheets are welded to a steel frame consisting of 2" x 1" x 16 Ga., 2" x 4" x 14 GA. or 4" x 2" x 14 GA tubes on maximum 24", 36" or 48" centers. Corner joints are mitered, reinforced and continuously welded. All surfaces are ground to a smooth finish. All skin splice joints will occur over the tube steel framing and shall be filled.

2.4 HARDWARE

- A. Fire door hardware shall conform to N.F.P.A. #80 and be as specified.
- B. All hardware for the door shall have a galvanized or zinc plated finish. The hardware shall include box track, adjustable track brackets, adjustable wall brackets, jamb binders, 10 gauge frame interlocks, adjustable concealed stay rollers, 6" x 6" wall washers and wall bolts. The box track shall be a minimum of 14 gauge steel. Also included is one (1) pair of four-wheel ball bearing hangers.
- C. Automatic Closing System: A counterweight, cable reel, or controlled speed cable reel (choose one) closing system connected to a triple fusible link through wall system.

- D. Mounting Hardware: Shall include all necessary wall washers and through wall bolts with nuts and washers.

2.5 OPTIONS

- A. Gasketing (option): Provide brush-type seals (or smoke seals) at head, jambs and sill.
- B. Pass Doors (option): Shall be 1 3/4" x 3'0" x 7'0" and have 1 1/2 pair heavy duty hinges, track bar closer and a mortised latch set or panic device.
- C. Vision Panels (option): Provide vision panels of the type, size, shape and location as noted on the drawings. Exposed glass shall not exceed 100 square inches. Glass shall be UL labeled.
- D. Track Hoods (option): Provide track weather-hood formed from galvanized steel sheet.
- E. Monorail Notch (option): Provide monorail notch as required. Include weatherseals to be trimmed in the field to seal around the monorail beam. Doors shall bear an FM Notch Label.
- F. Crush Plates (option): Required when wall material is not solid concrete.

2.6 OPERATOR SYSTEM (OPTION)

- A. Operator systems shall be the "Leopard" model #24E variable speed (max. of 24" per second) as manufactured by Door Engineering and Manufacturing, LLC. The operator will consist of a timing belt or chain drive system that is linked to the door with UL labeled disconnect mechanism. (The operator may also be used as the fire closing system and shall be supplied with a UPS battery backup-please consult factory for details.)
- B. Electric motor shall be of sufficient size to operate doors under normal operating conditions at no more than 75 percent of rated capacity. The motor shall be wound for three (3) phase 208 or 230 VAC, 60 Hertz operation.
- C. Electric Controls: Controls shall be furnished by the door manufacturer and shall be complete for each door, and built in accordance with the latest NEMA standards. Control circuits shall not exceed a nominal 110 volts.
 - 1. Controls shall include a variable frequency drive, along with a self diagnostic programmable logic controller with digital message display and input LED's. Controller shall include programmable close time delays and maximum open and close runtime timers.
 - 2. Motor starters shall be magnetic reversing, factory wired with overload and under voltage protection, and equipped with mechanical interlocks. All control components shall be enclosed in one enclosure with a wiring diagram placed on the inside of the cover.
 - 3. Enclosures shall be NEMA 4 with disconnect switch.
 - 4. Pushbuttons for each door shall include one (1) momentary pressure three-button push-button station marked "OPEN", "CLOSE" and "STOP". Push button enclosure shall be NEMA 4.
 - 5. Proximity switches shall stop the door in the full open and close positions. Two additional proximity sensors shall controls the deceleration of the door.
 - 6. Safety Edges: Provide electric safety edges on leading edge of all doors to reverse door upon contact with obstruction.

7. Photo Eyes: Provide one interior and one exterior mounted photo eye (sender/receiver type) with mounting brackets. Photo eyes shall be NEMA 4X.
8. Loop Detectors (option): Provide 'open' and/or 'safety' loop detectors as required. Control panel shall have an Auto/Manual switch for activating and deactivating the 'open' loop function.
9. Radio Controls (option): Where required, provide radio receiver and x single button remote controls.
10. Wiring: Door manufacturer shall supply controls only. Electrical contractor shall install controls and furnish and install conduits and wiring for jobsite power and control wiring.

2.7 FACTORY FINISHING

- A. Steel Surfaces: All exposed door surfaces will be thoroughly cleaned prior to receiving one (1) coat of manufacturers' standard structural primer.
 - a. Primer shall be manufactures' standard Diamond Vogel fast dry red structural steel primer L/FR/I and shall be applied by spraying.

PART 3-EXECUTION

3.1 INSTALLATION

- A. Install sliding fire doors in strict accordance with the approved drawings by qualified door erection crews. All door openings shall be completely prepared by the general contractor prior to the installation of the doors. Permanent or temporary electric wiring shall be brought to the door opening before installation is started and shall be completed so as not to delay the inspection test.
- B. Door shall be set plumb, level and square, and with all parts properly fastened and mounted. All moving parts shall be tested, adjusted and left in good operating condition.

3.2 ADJUSTING AND CLEANING

- A. Inspection of the doors and a complete operating test will be made by the installer in the presence of the general contractor or architect as soon as the erection is complete. Any defects noted shall be corrected. After door approval in the above test, the general contractor must assume the responsibility for any damage or rough handling of the doors during construction until the building is turned over to the owner and final inspection is made.
- B. Clean surfaces and repaint abraded or damaged finished surfaces to match factory-applied finish.

END OF SECTION 083xx