



PART 1: GENERAL

1.1 DESCRIPTION

A. General

1. Supply Bi-Fold Door complete from one manufacturer. Provide all labors, materials, tools, and equipment to furnish the Bi-Fold Door complete as specified.

1.2 RELATED WORK BY OTHERS

- A. Preparation of opening including jambs and header will be by the contractor. Any deviation of site conditions contrary to approved shop drawings must be called to the attention of the architect.
- B. All header, blocking, support structures, and jambs as required.
- C. Finishing all trim (paint or otherwise) and other materials adjoining door.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 – Administrative Requirements.
- B. Product Data: Submit manufacturer's product data and rough-in diagrams.
- C. Shop Drawings: Submit shop drawings for approval prior to fabrication. Indicate plans and elevations including opening dimensions, details of framing members, required clearance, and anchorage. Include summary of forces and loads applied to the framing members.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum twenty years documented experience.
- B. Provide each Bi-Fold Door as a complete unit by one manufacturer, including frames, panels, brackets, guides, hardware, operators, and installation accessories to door system.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened labeled packaging until ready for installation.
- B. Protect materials from exposure to moisture and sunlight until ready for installation.
- C. Store materials in a dry, ventilated weathertight location.

1.6 WARRANTY

- A. Furnish manufacturer's standard 3-year written warranty against defects in materials and workmanship, and against problems which arise through normal anticipated usage of the door during the warranty period.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Midland Door Solutions, which is located at: 1021 7th Street NE; West Fargo, ND 58078; Toll Free Tel: 800-921-7008; Tel: 701-277-8836; Fax: 701-277-8961; Email: request info (info@midlanddoorsolutions.com); Web: www.midlanddoorsolutions.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 BI-FOLD DOOR

A. Size

1. Clear Opening Width: _____
2. Clear Opening Height (Above Finished Floor Elevation): _____
3. Overall Height of Door (Clear height plus Wedge): _____
4. Width and Height: As indicated on the drawings.

B. Door Design Criteria

1. The doors shall be designed to the loading requirements provided by the architect.
2. The design shall be furnished, approved, and sealed by a professional engineer registered in the jurisdiction where the project is located, when required.



C. Building Design Criteria

1. The building header shall be designed to accommodate horizontal and vertical building deflections to support the bifold door in all positions (with the proper lateral bracing).
2. The building's door columns shall be framed to the proper design and size to reinforce the opening (with lateral bracing) and to carry all loads and vibrations imposed thereon.

D. Electrical Requirements

1. The contractor is responsible and required to completely install the pre-wired electrical door operator, push button controls, devices, and electrical conduit to the door operator controls.
2. Differentiate between manufacturer installed and field installed wiring and between components provided by door manufacturer and those provided by others.

E. Electric Power Operator

1. Electrical controls and devices shall conform to the requirements of the current National Electrical Code 513, NEMA, and be UL approved.
2. The operator is furnished complete and consists of a motor and factory-wired control panels consisting of magnetic reversing starters, limit switches, and push button controls, control circuit transformers, relays, and timing devices.

F. Bi-Fold Door Framework

1. Door frame shall be fixture welded steel tube sections engineered by the door manufacturer to withstand all anticipated loads without bowing, sagging, or restricting its operation.
2. Framing members shall be ASTM A500 Grade B square or rectangular steel tubing.
3. Door frame shall have pre-located top hinges to align with the building truss members.

G. Door Truss

1. Interior Truss – Standard
 - a. Steel tube truss mounted on the interior center of the door. An additional truss will be mounted at the interior base of the door.
2. Exterior Truss – Optional
 - a. Steel tube truss mounted on the exterior center of the door. An additional truss will be mounted at the interior base of the door.

H. Bottom Operator

1. Cable Drive
 - a. The solid steel drive shaft (ASTM 1018 Cold Finished Round) with cable lift drums shall be mounted on the bottom of door frame and run continuously along the entire door width to provide an even lift of the door.
 - b. The drive shaft shall be attached to the door frame / operator with cast iron 4-bolt greaseable flange bearings.
2. Strap Drive
 - a. The solid steel drive shaft (ASTM 1018 Cold Finished Round) with strap lift drums shall be mounted on the bottom of door frame and run continuously along the entire door width to provide an even lift of the door.
 - b. The drive shaft shall be attached to the door frame / operator with cast iron 4-bolt greaseable flange bearings.
3. Electric Operator: Mounted on the bottom frame of the door
 - a. Service: 240 VAC, single phase
 - b. Motor: 1-1/2 HP minimum with brake
 - c. Control Box: 24 VDC transformer, limit switches, contactors, and control wiring
 - d. Control Station: Nema 1 (Open, Close, Stop); wired for constant pressure on close.



- e. Top/Bottom Limit Switches: In control box to provide automatic shutoff when door reaches full open or closed position.
- I. Latching System
 - 1. Manual Latch – Single Latch Handle
 - 2. Automatic Latch
- J. Finishes
 - 1. Entire system frame and panels shall be cleaned and primed with a rust resistant gray primer.
- K. Available Accessories/Options
 - 1. Photo eyes that stops the downward movement of the door.
 - 2. Remote receiver and transmitter
 - 3. 3-phase electrical option
 - 4. Walk-in door
 - a. 32" x 72" nominal dimensions
 - b. Inside Swing
 - a. Left
 - b. Right
 - c. Lockset
 - 5. Custom paint
 - 6. Top Override Switch
 - a. Prevents over travel on open if internal limit switch fails.

PART 3: EXECUTION

3.1 SAFETY

- A. Photo eyes optional
- B. Sensing Edge

3.2 INSTALLATION

- A. Installation of bi-fold door shall be completed by a qualified installer or by a manufacturer representative.
- B. Permanent or temporary electric wiring shall be brought to the door location before installation.
- C. Install door, wheel track, and operating equipment complete with necessary hardware, seals, anchors, and equipment supports according to shop drawings, manufacturer's written instructions, and as specified.
- D. Top and Bottom limits shall be set according to manufacturers recommended height. Do not over travel the door beyond the recommended settings.
- E. Installer shall fasten all safety and warning labels as required by the door manufacturer.
- F. After the door is installed, the general contractor assumes the responsibility of any damage to the door or door components during construction until the building is turned over to the owner.

3.3 CLEANING AND ADJUSTING

- A. All surfaces shall be wiped clean and free of handprints, grease, and oil.
- B. Adjust door assembly for smooth operation and maintain full contact with weather-stripping.

3.4 TRAINING

- A. Installer shall demonstrate proper operation and maintenance procedures to owner's representative.
- B. Operating keys and owner's manual shall be provided to owner's representative.