BI-FOLD DOOR

The following specifications apply to standard WELL BILT INDUSTRIES Bi-Fold hangar doors. Special applications or requirements may make it necessary to vary these specifications accordingly.

1. Door Structure

Bi-Fold door frame shall be fabricated with ASTM A500 Grade B welded steel tubing not less than 11 Gauge wall thickness with minimum yield strength of 46,000 psi. Except for the bottom corners where the guide rollers are installed, all exterior corners are mitered at 45 degrees and welded on four sides for strength and to prevent water or moisture from entering the frame. Miscellaneous structural members shall conform to ASTM A500 and ASTM A-36 with minimum yield strength of 36,000 psi. Exterior to be left flush for customer provided exterior sheeting.

Framing members shall be square and true to dimension in all directions and shall not be out of line horizontally or vertically more than 1/8 inch in 20 feet. Door sections shall be fabricated in a manner so as to prevent bowing, racking, or warping during fabrication in order to hold the sections to specified tolerances. Welds which could affect the fit or function of the door shall be ground smooth.

When required, integral trusses shall be mounted to the interior of the horizontal framing members.

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2. Power Operator and Controls
Bi-Fold doors shall be provided with power operators to open and close the door. The Motor/Gear Reducer unit shall be equipped with an electric brake to stop and hold the door in any position of door travel. Electrical controls shall conform to National Electrical code Section 513. Control enclosures shall conform to NEMA 4. . Each control station shall be a two button type with buttons marked “Open” and “Close”. The “Open” and “Close” buttons shall be of the constant pressure type. When the door is in motion and pressure is released from the control button, the door shall stop instantly and remain in the stopped position. From the stopped position, the door shall be operable in either direction by the “Open” or “Close” control button. The control station shall be located near the same end of the door as the electrical supply connection. A three button control is utilized where automatic operation is specified. The three button control features a “Stop” button which, when depressed, will stop the door at any position. As with the two button control, the door will be operable in either direction by the “Open” or “Close” control button. All control stations utilize a keyed lock-out to aid in the prevention of unauthorized personnel operating the system.

Drive motor (or motors) shall be heavy duty 2 HP or larger TEFC type. Standard voltage is 230V, single phase with 208 or 230/460 volt three phase voltages optional. Electric brake shall have a manual release feature. The gear reducer shall be heavy duty with oil bath lubrication. Gear reducer is supplied with synthetic lubricant for maximum efficiency.

3. Drive Shaft
Bi-Fold doors are provided with a solid steel drive shaft that runs continuously for the full width of the door and is attached to the door frame near the bottom of the door. The drive shaft is driven from the gear reducer(s) by a dual chain drive system. Cable drums shall be steel tubing with end caps securely welded to the drive shaft. The drive shaft shall be supported by bearing mounts with zerk fittings at each cable drum and vertical member location.

4. Lift Cables
Lift cables shall be 3/16 inch or 1/4 inch diameter galvanized steel aircraft cable. The number of lift cables shall be sufficient to provide a minimum safety factor of five based on the finished weight of the door.

5. Limit Switches
Limit switches are factory preset based on the number of turns of the cable drum required to achieve the desired clear opening. Except for very tall doors, the limit switch is driven from the drive shaft at a 1:1 ratio. The cable drum is 2 3/8” diameter so that each revolution winds approximately 8.05” of 3/16” cable and 8.245” of 1/4” cable. Over-travel limit switches are provided as a safety feature to help prevent the door system from opening beyond its design limit.

6. Electrical Wiring
Furnished and pre-wired at the factory with supply and control cables extended to the specified side of the door for final hook up (By Others).

7. Hinges
Heavy duty hinges are welded on the doors by WELL BILT INDUSTRIES. The number and location varies with door size and wind load requirements. Top hinges are provided with bolt holes and can be bolted or welded to the supporting structure at the installers discretion (welding is recommended). Hinges are fabricated with 3/4 inch diameter pins and have been tested to withstand 15,000 lbs. tension loading. Top and center hinges are pre-lubed for life.

8. Bottom Guide Rollers
Precision sealed needle roller bearings shall be installed on bottom of doors at jamb column locations.

9. Anti-Sail Lugs
Bottom guide rollers shall be provided with anti-sail lugs to prevent the bottom of the door from being lifted away from the jamb columns by negative wind pressure loading.

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10. Locks
Standard locking system is a single handle locking system. This system simultaneously engages the jamb side locks and the floor lock pins. The handle is provided with an electrical interlock to prevent attempting to open the door before the lock is released.

11. Floor Lock Pins
Bi-Fold door shall be provided with 1 inch diameter floor lock pins (cane bolts), the number based on the door size and wind loading requirements. Floor lock pins are installed on the bottom door frame member and are intended to engage 1-3/4" diameter steel sleeved holes in the hangar concrete floor with a minimum of 3" of penetration into the finished floor.

12. Protective Finish
Standard finish on WELL BILT INDUSTRIES doors is a low VOC fab gray Primer. This provides short term protection of the metal surfaces until the door is installed and can be painted with a finish coat of paint. Red oxide primer can be provided by request.

13. Weather Seals
WELL BILT INDUSTRIES shall provide EPDM style 40 black rubber top and bottom weather seals to be installed by others when the door is being sheeted. EPDM is for outdoor and high temperature application. Resists ozone, steam, water, oxygenated solvents plus animal and vegetable oils.

14. Compliance
WELL BILT INDUSTRIES doors are constructed to comply with all codes and specifications provided at the time an order is initiated. Wind load compliance certification by a professional engineer licensed to practice in the state of Florida is available if required. WELL BILT INDUSTRIES is a Miami-Dade County Approved Hangar Door Manufacturer and was issued a Certificate of Competency.

15. Warranty
WELL BILT INDUSTRIES Bi-Fold door systems are warranted for one year from the date of purchase against defects in material and workmanship. Refer to WELL BILT INDUSTRIES for specific details.

16. Factory Testing
WELL BILT INDUSTRIES Bi-Fold door systems are factory tested prior to delivery. Factory testing is video taped and includes component, installation, maintenance and general operation details. A copy of this video will be duplicated and forwarded to the customer.

17. Owner's Manual
WELL BILT INDUSTRIES will provide each customer with an "Owner's Manual" which details the specifics pertaining to their custom door system.

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BI-FOLD DOOR OPTIONAL FEATURES

Personnel Doors
The standard personnel door supplied by WELL BILT INDUSTRIES is a 3078 size aluminum framed, hollow core door (30”x78”). Other sizes are available on special order. NOTE: Larger personnel doors should be specified with caution as higher doors may not fit within the bi-fold door frame and personnel doors wider than 32” may be damaged if accidentally left open when the bi-fold door is being opened or closed. An electrical interlock can be provided to prevent the bi-fold door from being operated unless the personnel door is securely closed.
WELL BILT INDUSTRIES also offers wind load rated personnel doors (36”x80”), as well as framed openings for personnel doors supplied by others (sized per customer specifications).

Passage locksets and wind chains are included. Locksets with dead bolts are available as well as master keyed locksets for multiple door installations.

Auto Lock System
WELL BILT INDUSTRIES offers an optional Auto-Lock system that engages the door side locks and floor lock pins as the door is closed and releases the side locks and retracts the floor lock pins as the door is opened. The Auto-Lock system can be used safely with the manual (constant pressure) control button or with an automatic open control system. If used with an automatic close control system photoelectric eye and/or safety edge is recommended for safety reasons.

Motor Covers
Sheet metal enclosures can be provided to close off the motor and drive system.

Photoelectric Eye
WELL BILT INDUSTRIES offers a 24 volt photoelectric beam system for the detection of objects in the path of the door and stopping the door closing action.

Warning Bell
WELL BILT INDUSTRIES offers a 24, 120, or 240 volt bell to ring when door is in operation.

Safety Edge
A safety device can be installed on the bottom edge of a bi-fold door to stop and reverse the closing action if an obstruction is encountered.

Remote Control
WELL BILT INDUSTRIES offers a one or two channel remote control system capable of opening or closing a bi-fold door system from up to 1500 feet away. Warning devices such as horns or lights plus safety edge or photoelectric eyes should be used with remote control systems.

Emergency Manual Open
WELL BILT INDUSTRIES offers a manual chain hoist system to open the door due to a power outage.

Wind Load Certification
Where local codes or authorities require, drawings and calculations verifying wind load compliance signed and sealed by a professional engineer licensed to practice in the state of Florida are available. Wind load certifications may ne available for additional states. Please inquire with WELL BILT INDUSTRIES.

UL Listing
Where local codes require, doors conforming to Underwriters Laboratory Listings can be provided.

Finish Paint
Custom industrial enamel finish paint is available.

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