

## FOUR-FOLD GT™ SPECIFICATIONS Trackless Folding Gate Systems

### **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 Specification Sections, apply to this Section.

##### 1.2 SUMMARY

- A. This Section includes Four-Fold metal gates with steel tube columns.
- B. Operation of Four-Fold metal gates includes column mounted electro-mechanical operators and controls listed with UL325.

##### 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 gate required, including data substantiating that products comply with requirements.
- C. Submittal Drawings showing fabrication and installation of Four-Fold metal gates 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. Gates 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 standard limited warranty for material and workmanship.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Trackless Four-Fold industrial metal gate manufactured by Door Engineering and Manufacturing, 400 Cherry Street, Kasota, MN 56050, (800)-959-1352 or equal products by other manufacturers approved in advance.

### 2.2 MATERIALS

- A. Steel Tube: ASTM A513 and ASTM A500/A500M
- B. Steel Sheets: Steel sheets of commercial quality, complying with ASTM A1011/A1011M hot-rolled steel sheet.
- C. Hardware: Manufacturer's standard components.
- D. Fasteners: Zinc-coated steel.

### 2.3 FOUR-FOLD DOORS

- A. Panel Construction: Minimum 14ga structural steel tube.
- B. Grille Inserts:
  - 1. OPTION 1: ¼" diameter galvanized woven wire mesh, 2" opening
  - 2. OPTION 2: 1" square verticals on 4" center
  - 3. OPTION 3: Custom (consult manufacturer)
- C. Columns: 12"X12"x ¼" tube columns with factory attached hinges, operator supports and base plates.
- D. Anchors: 1" diameter heavy duty anchors with two component epoxy adhesive.
- E. Finish: gate panels, columns and operator enclosures shall be hot dipped galvanized and prime painted with 2-5 mils PPG Spectacron 531-532 high build epoxy primer or equal. Finish coat shall be 2-3 mils PPG Spectacron 560

exterior grade urethane or equal. Finish color shall be select from manufacturer's standard RAL color chart or matched from a sample furnished by the customer.

- F. Hardware: Not less than three pairs of jamb and fold hinges per opening, and all bolts, nuts, fasteners, etc. necessary for complete installation and operation. Jamb hinges shall be dual shear and have two thrust bearings and two needle bearings. Jamb hinges shall be gusseted. Fold hinges shall be dual shear with two thrust bearings. All bearings shall be completely concealed within the hinge barrel. All hinge pins shall be minimum  $\frac{3}{4}$ " diameter hardened steel.

## 2.4 OPERATOR

- A. Each half of the opening shall be operated by an electro-mechanical drive unit designed for high cycle operation. Operator consists of an electric motor, dual stage gear reducer, and rotating drive arm. The door shall be operated with connecting rods attached to the rotating drive arm on the operator and to control arms attached to the jamb door section and to the door lintel. The connecting rods shall be positive drive, keeping the door under firm control at all times. The connecting rods shall be fitted with spherical bearings and control arms shall be equipped with oil impregnated bronze bearings on polished shafts.
- B. Operator shall open and close rapidly and start and stop gradually. Operator shall be adjustable to allow gate to fully clear the opening. Operator shall automatically lock the door in the closed position.
- C. Manual Release: The manual release shall allow the gate to be disengaged and moved manually from any position. Columns shall have an access cover to access the manual release lever. Access cover shall have the option of being secured with a heavy duty or detention grade lock. Release lever shall be accessible from floor level and allow for easy release and engagement without the use of tools.
- D. Electric motor shall be of sufficient size to operate gates under normal operating conditions at no more than 75 percent of rated capacity. The motor shall be wound for three phase 208/260/480 VAC, 60 Hertz operation.
- E. Electric Controls. Coordinate location of control panels with customer. Control panels can be mounted to jamb column or remote mounted in a secured location.
  - 1. Controls shall be UL325 compliant.
  - 2. Controls shall include a programmable logic controller with digital message display. Controller shall include programmable close timers and programmable inputs/outputs
  - 3. 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.
  - 4. Enclosures shall be NEMA 4 with disconnect switch and rain hood.
  - 5. Limit switches shall be provided at each operator to stop the travel of the door in its fully open or fully closed position.

6. Safety edges: Provide electric safety edges on leading edge of all doors to reverse door upon contact with obstruction.
7. Obstruction Detection: Operator shall stop the gate from opening or closing if the gate contacts an object and exceeds the adjustable maximum operator torque. No tools or adjustments shall be required to return the gate to normal operation.
8. Photo eyes: Provide (2) thru-beam type photo eyes integrated into the jamb columns and mounted at 6" and 24" above the finished floor, NEMA 4 rated.
9. Loop Detectors: Provide (1) safety and (1) Auxiliary (free exit) loop detector. Loop wire to be furnished and installed by others.
10. Access controls: Provide inputs for radio controls, card readers and other access controls. All additional access controls to be coordinated and furnished by others.
11. Wiring: Door manufacturer shall supply controls and components only. Columns shall be designed to allow wiring to enter up into the column through the footing. Both columns shall have access panels to allow easy access to internal wiring. Electrical contractor shall install controls and furnish and install conduits and wiring for jobsite power and control wiring between all components.
12. Security Enclosure (OPTIONAL): Furnish the control panel in a 10ga galvanized lockable enclosure. Enclosure shall be prepped for customer supplied lock.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install Four-Fold metal gates 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 gate. Permanent or temporary electric wiring shall be brought to the gate opening before installation is started and shall be completed so as not to delay the inspection test.
- B. Gates shall be set plumb, level, and square, and with all parts properly fastened and mounted. All moving parts shall be tested and adjusted and left in good operating condition.

### 3.2 ADJUSTING AND CLEANING

- A. Inspection of the gates 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 gates 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