

## SECTION 08331

### ROLLING SERVICE DOORS

GENERAL NOTES TO SPECIFIER:

THIS SPECIFICATION SECTION HAS BEEN PREPARED TO ASSIST DESIGN PROFESSIONALS IN THE PREPARATION OF PROJECT OR OFFICE MASTER SPECIFICATIONS. IT FOLLOWS GUIDELINES ESTABLISHED BY THE CONSTRUCTION SPECIFICATIONS INSTITUTE, AND THEREFORE MAY BE USED WITH MOST MASTER SPECIFICATION SYSTEMS WITH MINOR EDITING.

EDIT CAREFULLY TO SUIT PROJECT REQUIREMENTS. MODIFY AS NECESSARY AND DELETE ITEMS THAT ARE NOT APPLICABLE. VERIFY THAT REFERENCED SECTION NUMBERS AND TITLES ARE CORRECT. (NUMBERS AND TITLES REFERENCED ARE BASED ON MASTERFORMAT, 1995 EDITION).

THIS SECTION ASSUMES THE PROJECT MANUAL WILL CONTAIN COMPLETE DIVISION 1 DOCUMENTS INCLUDING SECTIONS 01330 SUBMITTAL PROCEDURES, 01620 PRODUCT OPTIONS, 01630 PRODUCT SUBSTITUTION PROCEDURES, 01660 PRODUCT STORAGE AND HANDLING REQUIREMENTS, 01770 CLOSEOUT PROCEDURES, AND 01780 CLOSEOUT SUBMITTALS. IF THE PROJECT MANUAL DOES NOT CONTAIN THESE SECTIONS, ADDITIONAL INFORMATION SHOULD BE INCLUDED UNDER THE APPROPRIATE ARTICLES.

THIS IS AN OPEN PROPRIETARY SPECIFICATION ALLOWING USERS THE OPTION OF APPROVING OTHER MANUFACTURERS WHICH COMPLY WITH THE CRITERIA SPECIFIED HEREIN.

NOTES TO THE SPECIFIER ARE CONTAINED IN BOXES AND SHOULD BE DELETED FROM FINAL COPY.

OPTIONAL ITEMS REQUIRING SELECTION BY THE SPECIFIER ARE ENCLOSED WITHIN BRACKETS, E.G.: [35] [40] [45]. IN CASES WHERE ONE OF THE OPTIONAL ITEMS IS A STANDARD FEATURE OF THE DOOR MODEL, IT IS LISTED IN THE FIRST POSITION. MAKE APPROPRIATE SELECTION AND DELETE OTHERS.

ITEMS REQUIRING ADDITIONAL INFORMATION ARE UNDERLINED, E.G.: \_\_\_\_\_.

OPTIONAL PARAGRAPHS ARE SEPARATED BY A REDLINED "OR," E.G.:

OR

## PART 1 GENERAL

### 1.1 SUMMARY

- A. Section Includes: [Manual] [and] [electric operated] overhead rolling doors.
- B. Related Sections:
  - 1. 05500 Metal Fabrications. Door opening jamb and head members.
  - 2. 06100 Rough Carpentry. Door opening jamb and head members.
  - 3. 08310 Access Doors and Panels. Access doors.
  - 4. 08700 Hardware. Padlocks. Masterkeyed cylinder.
  - 5. 09910 Paints. Field painting.
  - 6. Division 16. Electrical wiring and conduit, fuses, disconnect switches, connection of operator to power supply, and installation of control station and wiring.
- C. Products Supplied But Not Installed Under This Section:
  - 1. Control Station

INCLUDE APPROPRIATE LANGUAGE BELOW, INCLUDING A REFERENCE TO SECTION 01230 ALTERNATES, IF ROLLING SERVICE DOORS ARE INCLUDED IN ANY ALTERNATES, ADD SECTION 01230 TO 1.1 B. DELETE IF NO ALTERNATES.

D. Alternates:

## 1.2 SYSTEM DESCRIPTION

A. Design Requirements:

1. Wind Loading: Design doors to withstand up to [20 psf (950 Pa)][ \_\_ psf (\_\_\_Pa)] wind load.

## 1.3 SUBMITTALS

A. Reference Section 01330 Submittal Procedures; submit the following items:

1. Product Data.
2. Shop Drawings: Include special conditions not detailed in Product Data. Show interface with adjacent work.
3. Quality Assurance/Control Submittals:
  - a. Manufacturer's Installation Instructions.
4. Closeout Submittals:
  - a. Operation and Maintenance Manual.
  - b. Certificate stating that installed materials comply with this specification.

## 1.4 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer Qualifications: Minimum five years experience in producing doors of the type specified. ISO 9002 Registered.
2. Installer Qualifications: Manufacturer's approval.

## 1.5 DELIVERY STORAGE AND HANDLING

A. Reference Section 01660 Product Storage and Handling Requirements.

B. Follow manufacturer's instructions.

## 1.6 WARRANTY

A. Standard Warranty: Two years from date of shipment against defects in material and workmanship.

## **PART 2 PRODUCTS**

### 2.1 MANUFACTURER

A. Manufacturer: Cornell Iron Works, Inc., Crestwood Industrial Park, Mountaintop, PA 18707. Telephone: (800) 233-8366, Fax: (800) 526-0841. Underwriters Laboratories, Inc. (UL), ISO 9002 Registered.

INSERT NAME, ADDRESS, AND PHONE NUMBERS OF LOCAL DISTRIBUTOR BELOW.

1. Distributor:

B. Model: Rolling Service Door.

C. Substitutions: Reference Section 01630 Product Substitution Procedures.

## 2.2 MATERIALS

22 GAUGE IS STANDARD FOR DOOR WIDTHS THROUGH 14'-4" (4.37 m); 20 GAUGE IS STANDARD FOR DOOR WIDTHS OVER 14'-4" (4.37 m) THROUGH 25'-4" (7.72 m); 18 GAUGE IS STANDARD FOR DOOR WIDTHS OVER 25'-4" (7.72 m). HEAVIER THAN STANDARD GAUGES MAY BE SPECIFIED FOR DOOR WIDTHS THROUGH 25'-4" (7.72 m).

A. Curtain:

1. Slats: No. 5F, [22] [20] [18] gauge ASTM A 653 (A 653M), Commercial Quality, galvanized steel with G-90 (Z 275) zinc coating.
2. Bottom Bar: Two 2x2x1/8 inch (50x50x3.2 mm) structural steel angles.

OR 1&2

1. Slats: No. 5P, 20 gauge ASTM A 653 (A 653M), Commercial Quality, galvanized steel with G-90 (Z 275) zinc coating perforated with 0.062 inch (1.6 mm) diameter openings at 0.094 inch (2.4 mm) staggered centers, approximately 22 percent free area.
2. Bottom Bar: Two 2x2x1/8 inch (50x50x3.2 mm) structural steel angles.

OR 1&2

1. Slats: No. 5F, 20 gauge AISI 300 series stainless steel.
2. Bottom Bar: Two 2x2x1/8 inch (50x50x3.2 mm) AISI 300 series stainless steel angles.

OR 1&2

1. Slats: No. 5F, 0.050 inch (1.270 mm) aluminum.
2. Bottom Bar: Two 2x2x1/8 inch (50x50x3.2 mm) aluminum angles.

SELECT NYLON ENDLOCKS BELOW FOR DOORS UP TO 16X16 FEET AND CAST IRON FOR LARGER DOORS.

3. Fabricate interlocking sections with high strength [nylon] [cast iron] endlocks on alternate slats each secured with two 1/4" (6.35 mm) rivets. Provide windlocks as required to meet specified wind load.
4. Slat Finish:
  - a. Galvanized Steel: Phosphate treatment followed by light gray baked-on polyester enamel coating, minimum 0.6 mils (0.015 mm) cured film thickness.

OR

- a. Galvanized Steel: Phosphate treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.

OR

- a. Galvanized Steel: Phosphate and bonding treatment only, (no paint finish).

OR

- a. Stainless steel: No. 4 finish.

OR

- a. Aluminum: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].

5. Bottom Bar Finish:

- a. Steel: Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Steel: Phosphate treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Steel: ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.

OR

- a. Steel: Phosphate treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.

OR

- a. Stainless steel: No. 4 finish.

OR

- a. Aluminum: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].

B. Guides: Fabricate with minimum 3/16 inch (4.76 mm) [structural steel] [stainless steel] [aluminum] angles. Provide windlock bars of same material when windlocks are required to meet specified wind load.

1. Finish:

- a. Steel: Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Steel: Phosphate treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

OR

- a. Steel: ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.

OR

- a. Steel: Phosphate treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.

OR

MILL FINISH STRUCTURAL STAINLESS STEEL GUIDE ANGLES ARE USED FOR GUIDE COMPONENTS OVER 12'-0" (3.66 M) HIGH AND ON UNITS WIDER THAN 21'-4" (6.50 M).

- a. Stainless steel: [No. 4 finish] [Mill finish].

OR

- a. Aluminum: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].

- C. Counterbalance Shaft Assembly:
1. Barrel: Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width.
  2. Spring Balance: Oil-tempered, heat-treated steel helical torsion spring assembly designed for proper balance of door to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.
- D. Brackets: Fabricate from minimum 3/16 inch (5 mm) steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures.
1. Finish:
    - a. Steel: Phosphate treatment followed by a light gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.
    - OR
    - a. Phosphate treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.
    - OR
    - a. ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.
    - OR
    - a. Phosphate treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.
- E. Hood: [24 gauge galvanized steel] [24 gauge stainless steel] [0.040 inch (1.016 mm) aluminum] with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets as required to prevent excessive sag.
1. Finish:
    - a. Galvanized Steel: Phosphate treatment followed by light gray baked-on polyester enamel coating, minimum 0.6 mils (0.015 mm) cured film thickness.
    - OR
    - a. Galvanized Steel: Phosphate treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range, minimum 32 colors] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.
    - OR
    - a. Stainless steel: No. 4 finish.
    - OR
    - a. Aluminum: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].
- F. Weatherstripping:
1. Bottom Bar: Replaceable, 3-point, compressible vinyl gasket extending into guides.

FOLLOWING FOUR WEATHERSTRIP OPTIONS ARE AVAILABLE; DELETE THOSE NOT DESIRED.

OR

1. Bottom Bar, Motor Operated Doors: Weather/sensing edge within neoprene or rubber astragal extending full width of door bottom bar.
2. Guides: Vinyl strip sealing against fascia side of curtain.
3. Hood: Neoprene/rayon baffle to impede air flow above coil.
4. Lintel Seal: Nylon brush seal fitted at door header to impede air flow.

## 2.3 ACCESSORIES

STANDARD LOCKING METHODS ARE LISTED BELOW.

### A. Locking:

1. [Manual Push-Up] [Manual Crank Hoist]: Padlockable slide bolt on [coil] [fascia] side of bottom bar at each jamb extending into slots in guides.

OR

1. Manual Chain Hoist: Padlockable chain keeper on guide.

OR

AVAILABLE LOCKING OPTIONS ON ALL DOORS; CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 OR 641 FOR OTHER OPTIONS.

1. Padlockable slide bolt on [coil] [fascia] side of bottom bar at each jamb extending into slots in guides. [Provide interlock switches on motor operated units.]

OR

1. Masterkeyable cylinder operable from [coil] [fascia] [both] side[s] of bottom bar. [Provide interlock switches on motor operated units.]

VISION PANELS ARE AVAILABLE IN SLAT 5F ONLY. SHOW NUMBER AND PLACEMENT ON DRAWINGS. MINIMUM SPACING IS 1-1/2 INCHES (40 mm) APART, 12" (305 MM) IN FROM GUIDES. DELETE BELOW IF NOT REQUIRED.

- B. Vision Panels: 10 x 1-5/8 inch (254 x 41.28 mm) oval acrylic panes set with double sided foam glazing tape and secured with retaining clips and rivets. Refer to drawings for number and placement.

PASS DOORS WITH HINGED FRAMES ARE AVAILABLE. CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 OR 641 FOR OPTIONS. DELETE BELOW IF NOT REQUIRED.

### C. Pass Doors.

- D. Graphics Door Image: [Flat face surface of door curtain slats] [hood] [fascia] to include a factory applied [4] [2] -color process, 2 mil thick vinyl graphic image, 3M? or equal. Graphic image to be selected and electronically supplied by customer. Door opening size to be \_\_\_\_\_ feet wide x \_\_\_\_\_ feet high. Graphic image size to be \_\_\_\_\_ feet wide x \_\_\_\_\_ feet high.

EXPOSED MOVING OPERATOR COMPONENTS LOWER THAN 8 FEET ABOVE FLOOR LEVEL THAT CREATE POSSIBLE PINCH POINTS ARE REQUIRED TO BE COVERED

PER UL 325. SPECIFY AN OPERATOR COVER WHENEVER THIS FIELD CONDITION EXISTS.

- E. Operator [and Bracket Mechanism] Cover: Provide [24 gauge galvanized steel] [24 gauge stainless steel] [0.040 inch (1.016 mm) aluminum] sheet metal cover [to provide weather resistance] [to enclose exposed moving operating components] at coil area of unit. Finish to match door hood.

## 2.4 OPERATION

- A. Manual Push-Up: Provide lift handles on bottom bar and pole with hook.

OR

- A. Manual Chain Hoist: Provide chain hoist operator with endless steel chain, chain pocket wheel and guard, geared reduction unit, and chain keeper secured to guide.

OR

- A. Manual Crank Hoist: Provide crank hoist operator including crank gear box, steel crank drive shaft and geared reduction unit. Fabricate gear box to completely enclose operating mechanism and be oil-tight.

OR

- A. Supply Model GH, heavy duty, cUL listed, gearhead hoist type operator(s) rated \_\_\_H.P., \_\_\_Volts, \_\_\_Phase. Provide cUL listed electric door operator assembly of size and capacity recommended by door manufacturer; complete with electric motor and factory pre-wired motor controls, worm-gear reduction unit, solenoid operated brake, 3-button OPEN/CLOSE/STOP control station. Motor shall be high starting torque, continuous duty, industrial type, protected against overload by a current sensing or thermal overload device. Speed reduction shall be worm-gear-in-oil-bath gear reducer with synthetic "All Climate" oil. Shall provide 45:1 speed reduction. Door drive shall utilize minimum #50 roller chain and sprockets. Operator shall be equipped with an electrically interlocked floor level disconnect and chain hoist for manual operation and an electric solenoid-actuated brake to stop the motor and hold the door in position. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec). Fully adjustable, driven linear type limit switch mechanism shall synchronize the operator with the door. Low friction nylon limit nuts fitted on threaded steel shaft, rotating on oilite self-lubricating bronze bushings. The motor shall be removable without affecting the limit switch settings.

OR

- A. Supply Model H, industrial duty, cUL listed, belt drive type jackshaft type operator(s) rated \_\_\_H.P., \_\_\_Volts, \_\_\_Phase. Provide cUL listed electric door operator assembly of size and capacity recommended by door manufacturer; complete with electric motor and factory pre-wired motor controls, positive locking mechanical brake, emergency manual chain hoist, 3-button OPEN/CLOSE/STOP control station. Motor shall be high starting torque, continuous duty, industrial type, protected against overload by a current sensing or thermal overload device. Primary speed reduction shall be heavy-duty 5L V-belt and sprocket double reduced secondary providing mechanical braking to hold the door in any position. Operator shall be equipped with an adjustable friction clutch and floor level disconnect and emergency manual chain hoist assembly, output and door driven sprocket shall be provided with the operator. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 to 23 cm/sec). Fully adjustable, driven linear type limit switch mechanism shall synchronize the operator with the door. Low friction nylon limit nuts fitted on threaded steel shaft, rotating on oilite self-

lubricating bronze bushings. The motor shall be removable without affecting the limit switch settings.

MOST COMMON CONTROL STATIONS ARE LISTED BELOW; CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 OR 641 FOR OTHER OPTIONS. DOORS WITHOUT BOTTOM WEATHER/SENSING EDGE MUST BE WIRED FOR CONSTANT PRESSURE ON THE "CLOSE" BUTTON.

- 1. Control Station: Surface mounted, "Open/Close/Stop" push buttons; NEMA 1.  
OR
- 1. Control Station: Surface mounted, "Open/Close" push buttons; NEMA 1.  
OR
- 1. Control Station: Flush mounted, "Open/Close/Stop" push buttons; NEMA 1B.  
OR
- 1. Control Station: Flush mounted, "Open/Close" push buttons; NEMA 1B.  
OR
- 1. Control Station: Flush mounted, "Open/Close" key switch; NEMA 1B.  
OR
- 1. Control Station: Flush mounted, "Open/Close" key switch with "Stop" push button; NEMA 1B.  
OR
- 1. Control Station: Surface mounted, "Open/Close" key switch; NEMA 3R.  
OR
- 1. Control Station: Surface mounted, "Open/Close" key switch with "Stop" push button; NEMA 3R.  
OR
- 1. Control Station: Surface mounted, "Open/Close/Stop," push buttons with keyed lock-out, not masterkeyable; NEMA 4.

WEATHER/SENSING EDGE IS RECOMMENDED WITH MOTOR OPERATED UNITS; COORDINATE WITH 2.2 F; DELETE IF NOT DESIRED.

- B. Weather/Sensing Edge: Provide automatic [reversing] [stop] control by an automatic sensing switch within neoprene or rubber astragal extending full width of door bottom bar.
  - 1. Provide a LiteTouch? self-monitoring sensing edge system. Contact with rubber profile will interrupt a contained infrared light beam, signaling the door operator to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Supervised system alters normal door operation preventing damage, injury or death due to an inoperable sensing edge system.

OR

WIRELESS SENSING EDGE CONNECTION UTILIZES AN EMBEDDED RESISTOR WITHIN AN ELECTRIC SENSING EDGE TO PROVIDE A FULLY SELF-MONITORING EDGE SYSTEM.

- 1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide a self-monitoring wireless sensing edge connection to motor operator eliminating the need for a physical travelling electric cord connection between bottom bar sensing edge device and motor operator.

Supervised system alters normal door operation preventing damage, injury or death due to an inoperable sensing edge system.

OR

1. Provide an [electric] [pneumatic] sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide [self-coiling cable] [retracting safety cord and reel] connection to control circuit.

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine substrates upon which work will be installed and verify conditions are in accordance with approved shop drawings.
- B. Coordinate with responsible entity to perform corrective work on unsatisfactory substrates.
- C. Commencement of work by installer is acceptance of substrate.

#### **3.2 INSTALLATION**

- A. General: Install door and operating equipment with necessary hardware, anchors, inserts, hangers and supports.
- B. Follow manufacturer's installation instructions.

#### **3.3 ADJUSTING**

- A. Following completion of installation, including related work by others, lubricate, test, and adjust doors for ease of operation, free from warp, twist, or distortion.

#### **3.4 CLEANING**

- A. Clean surfaces soiled by work as recommended by manufacturer.
- B. Remove surplus materials and debris from the site.

#### **3.5 DEMONSTRATION**

- A. Demonstrate proper operation to Owner's Representative.
- B. Instruct Owner's Representative in maintenance procedures.

END OF SECTION