SECTION 08 33 00

EntryDefender®

Forced Entry Protection Rolling 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®, 2004 edition).

This section assumes the project manual will contain complete division 01 documents including sections 01 33 00–submittal procedures, 01 62 00–product options, 01 25 13–product substitution procedures, 01 66 00–product storage and handling requirements, 01 77 00–closeout procedures, and 01 78 00–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 and highlighted, e.g.: \_\_\_\_\_\_\_\_\_\_\_\_\_.

**PART 1** GENERAL

1.1 SUMMARY

A. **Section Includes:** Electric operated, automatic closing, overhead rolling doors

B. **Related Sections:**

1. 05 50 00–Metal Fabrications. Door opening jamb and head members.

2. 06 10 00–Rough Carpentry. Door opening jamb and head members.

3. 08 31 00–Access Doors and Panels. Access doors.

4. 08 70 00–Hardware. Padlocks. Masterkeyed cylinder.

5. 09 91 00–Painting. Field painting.

6. Division 26. Electrical wiring and conduit, fuses, disconnect switches, connection of operator to power supply, installation of control station and wiring, and connection to alarm systems.

C. **Products That May Be Supplied, But Are Not Installed Under This Section:**

1. Control Station

1.2 SYSTEM DESCRIPTION

A. **Performance Requirements:**

1. Provide doors approved by Department of State and compliant with DOS Certification standard “**SD-STD-01.01 REVISION G (AMENDED) FORCED ENTRY AND BALLISTIC RESISTANCE OF STRUCTURAL SYSTEMS**”, providing at least [5,15,60] minutes of protection against non-ballistic forced entry and **ASTM F3038 STANDARD TEST METHOD FOR TIMED EVALUATION OF FORCED ENTRY-RESISTANT SYSTEMS**

2. Provide documentation of testing with an IAS accredited laboratory proving the door meet or exceed criteria outlined in “**SD-STD-01.01 REVISION G (AMENDED) FORCED ENTRY AND BALLISTIC RESISTANCE OF STRUCTURAL SYSTEMS**” and **ASTM F3038 STANDARD TEST METHOD FOR TIMED EVALUATION OF FORCED ENTRY-RESISTANT SYSTEMS**

**Design Requirements**

 **Cycle Life**

* 1. Standard construction for normal use to operate not less than 20,000 cycles and for 20 cycles/day

\*\* **NOTE TO SPECIFIER** \*\* Wind loaded doors are not required on interior applications. If wind load is not a requirement, delete the next statement below.

B. **Design Requirements:**

1. **Wind Loading:**

a. Supply doors to withstand up to [125] PSF design wind load

**\*\*NOTE TO SPECIFIER\*\*** If your project does not involve a custom layout or custom product modifications, please delete D and E. If you are unsure, please contact Architectural Design Support at 833-958-1273.

C. **New Product:**

1. This is a new product that has been developed by CornellCookson. Alternate manufacturers may be unable to meet the specification.

D. **Custom Layout:**

1. Product has been reconfigured for a custom layout, refer to drawings by CornellCookson.

E. **Customized Product:**

1. This product has custom modifications designed by CornellCookson. Contact Manufacturer for details.

1.3 SUBMITTALS

A. Reference Section 01 33 00–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. Provide manufacturer ISO 9001:2015 registration.

b. Provide manufacturer and installer qualifications - see 1.4 below.

c. Provide 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:** ISO 9001:2015 registered and a minimum of five years of experience in producing rolling products.

2. **Installer Qualifications:** Manufacturer's approval.

1.5 DELIVERY STORAGE AND HANDLING

A. Reference Section 01 66 00–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.

B. **Maintenance:** Submit for owner’s consideration and acceptance of a maintenance service agreement for installed products.

**PART 2** PRODUCTS

2.1 MANUFACTURER

A. **Manufacturer:**

1. **Cornell:** 24 Elmwood Avenue, Mountain Top, PA 18707. Telephone: (800) 233-8366.

**2. Cookson:** 1901 South Litchfield Road, Goodyear, AZ 85338. Telephone: (800) 294-4358.

3. **Clopay:** 8585 Duke Blvd, Mason, OH 45040. Telephone: (513) 770-4800.

**Substitutions:** Not permitted.

2.2 PRODUCT INFO

\*\* NOTE TO SPECIFIER \*\* Select one of the following. Last two digits (-XX) based on forced entry resistance times.

1. **Model:**  [PED0101-05] [PED0101-15] [PED0101-60]

2.3 MATERIALS

A. **Curtain:**

1. **Slats:**

A. **Steel with Finish as Described Below:** Minimum 12 gauge, ASTM A1008 or ASTM A1011 steel slat no smaller than 4’’ tall.

2. **Finish:**

\*\* **NOTE TO SPECIFIER** \*\* Select one of the following.

a. **Powder Coat (Stock Colors):** Zirconium treatment followed by a [gray] [tan] [white] [brown] baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

b. **Powder Coat (Color Selected by Architect):** Zirconium treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

B. Stainless Steel Type 304, #4 finish, minimum 12 gauge, ASTM A666 slat no smaller than 4’’ tall.

c. Stainless Steel Type 316, #4 finish, minimum 12 gauge, ASTM A666 slat no smaller than 4’’ tall.

B. **Endlocks/Windlocks:** Retention groove integrated into the body of the slat use to retain the slats within the guides

C. **Bottom Bar:**

1. **Configuration:**

a. 12 Gauge steel formed bottom bar profile indistinguishable from the rest of the curtain, with strengthening insert and 3in by 2in 11 Gauge tube reinforcement.

2. **Finish:**

\*\* **NOTE TO SPECIFIER** \*\* Select one of the following.

a. **Powder Coat (Stock Colors):** Zirconium treatment followed by a [gray] [tan] [white] [brown] baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

b. **Powder Coat (Color Selected by Architect):** Zirconium treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

c. Stainless Steel Type 304, #4 finish

d. Stainless Steel Type 316, #4 finish

D. **Guides:**

1. **Fabrication**

a. Minimum 1/4 inch (6.35mm) steel. Top of inner and outer guide shapes to be flared outwards to form bellmouth for smooth entry of curtain into guides. Top 16 ½” (419.10 mm) of coil side guide shapes to be removable for ease of curtain installation and as needed for future curtain service.

2. **Finish:**

\*\* **NOTE TO SPECIFIER** \*\* Select one of the following.

a. **Powder Coat (Stock Colors):** Zirconium treatment followed by a [gray] [tan] [white] [brown] baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

b. **Powder Coat (Color Selected by Architect):** Zirconium treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

c. Stainless Steel Type 304 ASTM A666

d. Stainless Steel Type 316 ASTM A666

E. **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 the door. Provide wheel for applying and adjusting spring torque.

F. **Brackets:** Fabricate from minimum 3/8 inch (9.525 mm) steel plate with permanently lubricated ball or roller bearings at rotating support points to support counterbalance shaft assembly and form end closures

\*\* **NOTE TO SPECIFIER** \*\* Select one of the following.

1. **Finish:**

a. **Powder Coat (Stock Colors):** Zirconium treatment followed by a [gray] [tan] [white] [brown] baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

b. **Powder Coat (Color Selected by Architect):** Zirconium treatment followed by baked-on polyester powder coat, [color as selected by Architect from manufacturer's standard color range] [custom color as selected by Architect]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

c. Type 304 Stainless Steel in mill finish

d. Type 316 Stainless Steel in mill finish

G. **Hood:**

A. Minimum 24 gauge galvanized steel with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets, when required.

\*\* **NOTE TO SPECIFIER** \*\* Select one of the following.

a. **GalvaNex™ Coating System (Stock Colors):**

1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and [gray] [tan] [white] [brown] baked-on polyester enamel finish coat

a. **SpectraShield® Coating System (Color Selected by Architect):**

1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding, gray baked-on base coat and gray baked-on polyester finish coat

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

a. **Atmoshield®** **Powder Coating System (Color Selected by Architect):**

1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding, gray baked-on base coat and gray baked-on polyester finish coat

2) Zirconium pre-treatment followed by baked-on polyester powder coat, with [weathered iron, weathered brown, earth, weathered bronze, terra cotta, stucco, platinum, olde copper, rust, dark roast, weathered copper]; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better

B. Minimum 24 gauge type 304 Stainless Steel with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets, when required.

C. Minimum 24 gauge type 304 Stainless Steel with reinforced top and bottom edges. Provide minimum 1/4 inch (6.35 mm) steel intermediate support brackets, when required.

2.4 OPERATION

1. **Motor Operation:**

\*\* **NOTE TO SPECIFIER** \*\* Select one of the following.

1. **Motor** **- Continuous Use - Model SG (Super Duty Gear Head) Operator:** The operator must not extend above or below the door coil when mounted front-of-coil. cULus listed (to comply with UL requirements in The United States and Canada). Totally Enclosed Fan Cooled gear head operator(s) rated (1/2) to (7 1/2) hp as recommended by door manufacture for size and type of door, \_\_\_\_Volts, \_\_\_\_Phase. Provide complete with electric motor and factory pre-wired motor control terminals, maintenance free solenoid actuated brake, emergency manual chain hoist provided up to 2 hp and control station(s). Motor shall be high starting torque, industrial type, with overload protection. Primary speed reduction shall be heavy-duty gears running in grease or oil bath with mechanical braking to hold the door in any position. When equipped, the emergency manual chain hoist assembly is automatically disengaged when motor is energized. A disconnect chain shall not be required to engage or release the manual chain hoist. Operator drive and door driven sprockets shall be provided with minimum #50 roller chain. 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 screw type cam limit switch mechanism shall synchronize the operator with the door. The motor shall be removable without affecting the limit switch settings. The electrical contractor shall mount the control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions.

\*\* **NOTE TO SPECIFIER** \*\* AlarmGard may be selected in applications where door will be activated to close upon alarm, by emergency activation method, or power outage (when desired and not using RBBU or other backup power source).

2. **AlarmGard Advanced Motor Operation:** UL, cUL listed NEMA 1 enclosure, horsepower as recommended by manufacturer, [115v single] [230v single] [208/230v three] [460v three] phase service. Provide a totally enclosed non ventilated motor, removable without affecting the setting of limit switches; thermal overload protection, planetary gear reduction, adjustable rotary limit switch mechanism and a transformer with 24v secondary output. All internal electrical components are to be prewired to terminal blocks.

a. Provide a failsafe motor operated door assembly requiring no ancillary or externally mounted release devices, cables, chains, pulleys, reset handles or mechanisms.

b. Provide an internal electrical failsafe release device that requires no additional wiring, external cables or mounting locations.

c. Provide an internal solenoid brake mechanism to hold the door at any position during normal door operation.

d. Provide logic for [1] [2] [3] fully monitored safety reversing devices such that the failure of any single monitored device will cause the motor operator to automatically revert to constant pressure to close.

e. Electrically activate door system automatic closure by [notification from central alarm system] [or [power outage] [power outage exceeding 6 hours with R-BBU battery backup system].

f. Provide an automatic alarm closure selectable time delay of zero or ten seconds.

g. Control automatic closure speed with an internal, totally enclosed, variable rate centrifugal governor without the use of electrical pulsation, constant rate viscosity, oscillation type or other exposed governing devices.

h. Maintain automatic closure speed at not more than 9” (229 mm) per second.

i. Enable safety edge function during alarm closing while power is present for [0] [1] [3] cycle[s]. Enable door to rest upon obstruction following this sequence.

j. Electrically reset internal failsafe release device and door operating system upon restoration of electrical power and upon clearing of the alarm signal without requiring human interaction.

k. Provide selectable ability for the door system to automatically self-cycle to the fully open position following automatic reset without requiring human interaction.

l. Provide an integral, non-resettable cycle counter.

m. Ensure that manual resetting of spring tension, release devices, linkages or mechanical dropouts will not be required.

n. Provide minimum #50 roller chain for drive connection from motor drive assembly to the door drive shaft.

o. Install system only with manufacturer supplied or specified fasteners.

p. Notify electrical contractor to mount control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the door system wiring instructions.

3. **AlarmGard Plus Motor Operation with Chain Hoist and Battery Backup:** UL, cUL listed NEMA 1 enclosure, horsepower as recommended by manufacturer, [115v single] [230v single] [208/230v three] [460v three] phase service. Provide a totally enclosed non-ventilated motor, removable without affecting the setting of limit switches; thermal overload protection, planetary gear reduction, adjustable rotary limit switch mechanism and a transformer with 24v secondary output. All internal electrical components are to be prewired to terminal blocks.

a. Provide a failsafe motor operated door assembly requiring no ancillary or externally mounted release devices, cables, chains, pulleys, reset handles or mechanisms

b. Equip operator with an emergency manual chain hoist assembly that provides emergency operation during non-alarm power failure.

c. Provide an internal electrical failsafe release device that requires no additional wiring, external cables or mounting locations.

d. Provide an internal solenoid brake mechanism to hold the door at any position during normal door operation.

e. Provide logic for [1] [2] [3] fully monitored safety reversing devices such that the failure of any single monitored device will cause the motor operator to automatically revert to constant pressure to close.

f. Electrically activate door system automatic closure by [notification from central alarm system] [notification from local detectors] or [extended power failure].

g. Provide an automatic alarm closure selectable time delay of zero or ten seconds.

h. Control automatic closure speed with an internal, totally enclosed, variable rate centrifugal governor without the use of electrical pulsation, constant rate viscosity, oscillation type or other exposed governing devices.

i. Maintain automatic closure speed at not more than 9” (229 mm) per second.

j. Enable safety edge function during alarm closing while power is present for [0] [1] [3] cycle[s]. Enable door to rest upon obstruction following this sequence.

k. Electrically reset internal failsafe release device and door operating system upon restoration of electrical power and upon clearing of the alarm signal without requiring human interaction.

l. Provide selectable ability for the door system to automatically self-cycle to the fully open position following automatic reset without requiring human interaction.

m. Provide an integral, non-resettable cycle counter.

n. Ensure that manual resetting of spring tension, release devices, linkages or mechanical dropouts will not be required.

o. Provide minimum #50 roller chain for drive connection from motor drive assembly to the door drive shaft.

p. Install system only with manufacturer supplied or specified fasteners.

q. Notify electrical contractor to mount control station(s) and supply the appropriate disconnect switch, all conduit and wiring per the door system wiring instructions.

r. Drop test and reset door system twice by all means of activation and comply fully with NFPA 80 Section 5.

**\*\* NOTE TO SPECIFIER** \*\* Most common control stations for motorized doors are listed below; Consult CornellCookson Architectural Design Support at (800) 233-8366 ext. 4551 for other options.

B. **Control Station:** For use with motor operated units only

\*\* **NOTE TO SPECIFIER** \*\* Select one of the following.

1. **Flush mounted:** "Open/Close/Stop" push buttons; NEMA 1B

1. **Flush mounted:** "Open/Close" key switch with "Stop" push button; NEMA 1B

1. **Surface mounted:** "Open/Close/Stop" push buttons; NEMA 1

1. **Surface mounted:** "Open/Close" key switch with "Stop" push button; NEMA 3R

1. **Surface mounted:** "Open/Close/Stop" push buttons with keyed lock-out, not masterkeyable; NEMA 4

C. **Control Operation:**

**\*\* NOTE TO SPECIFIER** \*\* Select one of the following.

1. **Constant pressure to close:**

a. No sensing device required

\*\* **NOTE TO SPECIFIER \*\*** Interruption of beam (when using photo eyes) or contact before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Select one of the following.

1. 2. **Momentary Contact to Close:**

Fail-safe, UL325-2010 Compliant Entrapment Protection for Motor Operation.

a. **Smartsync Wireless Edge Kit –** continuously monitored, wireless sensing/weather edge seal extending full width of door bottom bar. Contact before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Wireless edge kit will use Zigbee wireless technology. Radio band wireless sensing edges will not be permitted.

b. **2-wire, E.L.R. electric sensing/weather edge** seal extending full width of door bottom bar. Contact before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Provide a [retracting safety cord and reel] [self-coiling cable] connection to control box.

c. **NEMA 4X photo eye sensors** consisting of a transmitter and receiver that are to be mounted within 6” (152.4 mm) of the floor, projecting an IR beam across the entire width of the door. Interruption of beam before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Electrical contractor to provide low voltage wiring from the transmitter and receiver to the door operator.

d. **NEMA 1 photo eye sensors** consisting of a transmitter and receiver that are to be mounted within 6” (152.4 mm) of the floor, projecting an IR beam across the entire width of the door. Interruption of beam before door fully closes shall cause door to immediately stop downward travel and reverse direction to the fully opened position. Electrical contractor to provide low voltage wiring from the transmitter and receiver to the door operator.

\*\* **NOTE TO SPECIFIER** \*\* Optional secondary entrapment protection devices are available if desired. Consult CornellCookson Architectural Design Support at (800) 233-8366 ext. 4551 for other options.

2.5 ACCESSORIES

A. **Locking:**

1. Manual bolt lock located above ground level. Door should have the ability to be locked/unlocked from ground level without special tools, complete with interlock to prevent motor operation while in the locked position. Lock activation device requires ability to integrate a padlock to provide protection against tampering.

\*\* **NOTE TO SPECIFIER** \*\* Include R-BBU battery back-up system with AlarmGard motor operators to add a four hour time delay to auto-closing upon power failure. This system does not provide for power opening of the unit, but allows for programming open/close obstruction cycling should the sensing edge encounter a stationary obstruction in the opening during AC power, alarm signal closing. Coordinate with section for AlarmGard™ motor operated systems. Delete if not desired.

C. **Battery Back-Up:**

1. **Model R-BBU Battery Back-Up System for AlarmGard Motor Operator:**

a. Prevent gravity closure for a minimum of four hours due to power failure.

**\*\* NOTE TO SPECIFIER** \*\* Exposed moving operator components lower than 8 feet above floor level may create hazards required to be covered per UL 325. Specify an operator cover whenever this field condition exists.

E. **Operator and Full Bracket Mechanism Cover:**

1. Provide minimum 24 gauge galvanized steel sheet metal cover to provide weather resistance to enclose exposed moving operating components at coil area of unit. Finish to match door hood.

**\*\* NOTE TO SPECIFIER \*\*** LED-illuminated light kit is a guide mounted LED light strip to provide an additional visible color coded notification on the door opening status. Delete below if not required.

1. **LED Light Kit :**
	1. Include LED Light Kit in [5ft] [10ft] [15ft] length. IP68 rated LED light kit to include guide mounting channel, power supply, controller and signal wire. LED lights to be solid red when door is closed, flash red when door is in motion and solid green when door is fully open.

**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

1. General: Install door and operating equipment with necessary hardware, anchors, inserts, hangers and supports.

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 FIELD QUALITY CONTROL

A. Site Test: Test doors for normal operation and automatic closing.

3.5 CLEANING

A. Clean surfaces soiled by work as recommended by manufacturer.

B. Remove surplus materials and debris from the site.

3.6 DEMONSTRATION

A. Demonstrate proper operation, testing and reset procedures to Owner's Representative.

B. Instruct Owner's Representative in maintenance procedures.

**END OF SECTION**