SECTION 08 33 00

SentryGate® 3

**ROLLING SECURITY GRILLES**

**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 SPECIFIER \*\*** are highlighted in red text and should be deleted from final copy.

Optional items requiring selection by 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:** [manual] [electric operated] rolling counter 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, and installation of control station and wiring

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

1. Control Station

1.2 SYSTEM DESCRIPTION

A. **Design Requirements:**

1. **Cycle Life:**

a. Standard construction for normal use of up to 20 cycle per day maximum, and an overall maximum of 50,000 operating cycles for the life of the grille

2. **Safety:**

a.Chain operated doors shall be designed so that the door immediately stops upward or downward travel and is maintained in a stationary position when the hand chain is released by user.

\*\*NOTE TO SPECIFIER\*\* If your project does not involve a custom layout or custom product modifications, please delete 3 and 4. If you are unsure, please contact Architectural Design Support at 833-958-1273.

3. **Custom Layout:**

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

4. **Customized Product:**

a. 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 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 experience in producing counter doors of the type specified

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**

3. **Clopay Building Products**

 **Substitutions:** Not permitted

2.2 PRODUCT INFORMATION

A. **Model:** ESG20

2.3 MATERIALS

A. **Curtain:**

1. **Fabrication:**

a. **High strength injection molded components** arranged in a "brick" style pattern. Color to be [black] [white] matte finish. Assemble panels to create an open pattern curtain with slots having a clear aperture of 7” (177.8 mm) x 1-1/2” (38.1 mm). Panels to be interconnected using continuous horizontal aluminum rods, 5/16 inch (7.94 mm) diameter, 5056 H32 aluminum alloy, spaced 2” (50.8 mm) on center and locked in guides with steel retention rings. Curtain assembly shall be completely smooth and free of sharp edges. Curtain to be attached to shaft using minimum 22 gauge galvanized steel fastening sections, each 4” (101.6 mm) in length.

B. **Bottom Bar**

1. **Configuration:**

a. **Heavy duty extruded aluminum section** with a continuous interior lift handle. Provide bottom vinyl astragal seal.

2. **Finish:**

a. **Aluminum:** [Clear anodized] [Black anodized] [Baked-on polyester powder coat, color as selected by Architect from manufacturer's standard color range, minimum 32 colors; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.]

C. **Guides:**

1. **Fabrication:**

a. Heavy duty extruded aluminum two piece guide sections which shall conceal wall attachment fasteners. Incorporate extruded aluminum retaining strip to prevent curtain from being pulled from guides.

2. **Finish:**

a. **Aluminum:** [Mill finish] [Clear anodized] [Black anodized] [Baked-on polyester powder coat, color as selected by Architect from manufacturer's standard color range, minimum 32 colors; minimum 2.5 mils (0.065 mm) cured film thickness; ASTM D-3363 pencil hardness: H or better.]

D. **Shaft Assembly:**

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

1. **Counterbalance Shaft Assembly:**

a. **Barrel:** Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width

b. **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

1. **Tube Motor Shaft Assembly:**

a. **Barrel:** Steel pipe capable of supporting curtain load with maximum deflection of 0.03 inches per foot (2.5 mm per meter) of width

E. **Brackets:**

Fabricate from reinforced steel plate with bearings at rotating support points to support counterbalance shaft assembly and form end closures

1. **Finish:**

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

a. **Powder Coat (Gray) (No Hood Required):** Zirconium treatment followed by a gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

a. **Powder Coating System to match hood (Color Selected by Architect):** Zirconium 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

F. **Hood:**

\*\***NOTE TO SPECIFIER**\*\* Hoods are not normally provided for coil above ceiling application. Delete hood below if not desired.

Minimum [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.

1. **Finish:**

\*\* **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 gray baked-on base coat and gray 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, 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

a. **Aluminum:** [Clear anodized] [Black anodized]

2.4 OPERATION

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

A. **Manual Operation:**

1. **Push-Up:** Manual lift or pole with hook

1. **Crank Hoist:** 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.

1. **Manual ControlGard Chain Hoist:** Provide chain hoist operator with endless steel chain, chain pocket wheel and guard, geared reduction unit, and chain keeper secured to guide. Chain hoist to include integral brake mechanism that will immediately stop upward or downward travel and maintain the door in a stationary position when the hand chain is released by the user.

**\*\* NOTE TO SPECIFIER** \*\* Select model MG operators for units that will routinely cycle less than 20 times per day and require no more than 3/4 HP.

A. **Motor Operation:**

1. **Motor – Standard Use – Model MG (Industrial Duty Gear Head) Operator:** The operator must not extend above or below the door coil when mounted front-of-coil. Rated for a maximum of 20 cycles per hour (not to be used for consecutive hours) cULus listed (to comply with UL requirements in The United States and Canada), Totally Enclosed Non Ventilated gear head operator(s) rated (1/3) (1/2) or (3/4) 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] [provisions for auxiliary push-up operation] and control station(s). Motor shall be high starting torque, industrial type, protected against overload with an auto-reset thermal sensing device. Primary speed reduction shall be heavy-duty, lubricated gears with mechanical braking to hold the door in any position. Operator shall be equipped with [an emergency manual chain hoist assembly that safely cuts operator power when engaged. A disconnect chain shall not be required to engage or release the manual chain hoist.] [a disconnect cable for auxiliary push-up operation.] Operator drive and door driven sprockets shall be provided with #50 roller chain. Provide an integral Motor Mounted Interlock system to prevent damage to door and operator when mechanical door locking devices are provided. Operator shall be capable of driving the door at a speed of up to 9” per second or as recommended for door size. Fully adjustable, driven linear screw type cam limit switch mechanism shall synchronize the operator with the door. 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** \*\* A tube motor is ideal for tighter clearances, providing the convenience of a motor, all within limited headroom conditions. Recommended for applications not exceeding 5 cycles per hour.

1. **Motor - Electric Tube Motor Operator:** Rated for a maximum of 5 cycles per hour, UL325 listed, rated (50 ft-bl/sec) (100 ft-bl/sec) or (150 ft-bl/sec) as recommended by door manufacturer for size and type of door, 120 Volts, 1 Phase. Provide complete with electric tube motor, maintenance free electric brake, emergency manual crank hoist and control station(s). Motor shall be protected against overload with an auto-reset thermal sensing device. Operator shall be equipped with an emergency manual crank hoist assembly that safely cuts operator power when engaged. A disconnect chain shall not be required to engage or release the manual crank hoist. Electronic limit switch required. The electrical contractor shall mount the control station(s) and supply all conduit and wiring per the overhead door wiring instructions.
2. **Motor - Evergard Tube Motor Operator**: Complete electric tube motor operator with 120V Single Phase, Nema1 Wall Mounted Control Unit, 24V rechargeable battery back-up, 12 ft long, pre-wired, wiring harness, solenoid actuated brake and speed governor and 3 button push button station. Motor is rated for a maximum of 10 cycles per hour, 24 VDC TENV motor, overload protection, cULus recognized, with a rating as recommended by door manufacturer for size and type of door. Operator shall be capable of driving the door at a speed of 3 to 8 inches per second (8.69 to 20.22 cm/sec). Operator shall also be capable of 12-28 RPM. Fully adjustable mechanical internal worm limit switch mechanism shall synchronize the operator with the door. The electrical contractor shall mount the control stations and supply the appropriate disconnect switch all conduit and wiring per the overhead door wiring instructions. Provide a guide mounted interlock system to prevent damage to the door and operator when mechanical door locking devices are provided.
	1. Supply model **EverGard Motor Control Box** with programmable logic board and back-up power supply.  120v AC input power with auto switch to 24v DC back-up power.  Back-up power to provide power for 10 cycles (25 minutes)
		1. (2) 12v rechargeable lead sealed batteries.
		2. Programmable battery self-testing
		3. Monitoring points for open/close position, AC power loss and battery low voltage
		4. 12’ wiring whip to connect control box and motor standard (**Optional 25’, 50’, 75’ & 120’ available**)
		5. Emergency Push Button (EPB):  Flush mounted, single red push button station wired for emergency open function only.
		6. Door power indicator: Flush mounted voltage monitor for battery back-up system.  Flashing red light indicates low battery power and maintenance check-up.  Can be located up to 150 ft. away from motor control box.
		7. Non-resettable cycle counter
		8. UL325 compliant system.

appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions.

**\*\* NOTE TO SPECIFIER** \*\* Most common control stations for motorized shutters are listed below; Consult 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. **Surface mounted:** "Open/Close/Stop" push buttons; NEMA 1

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

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

1. **Flush mounted:** "Open/Close" key switch with ["Stop" push button and] [small format Best type 7-pin cylinder] [Schlage 6-pin cylinder] [#5 U-Change cylinder]; NEMA 1B

1. **(Tube Motor Only):** Flush mounted: Rocker Switch; NEMA 1

1. **(Tube Motor Only):** Flush mounted: Designer Switch; NEMA 1

1. **(Tube Motor Only):** Flush mounted: Toggle Switch; NEMA 1

C. **Control Operation:**

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

1. **Constant pressure to close:**

a. **No sensing device required**

a. **2-wire, electric sensing 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 circuit.

\*\* **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. **Momentary contact to close:**

Fail-safe, UL325-2010 Compliant Entrapment Protection for Model MG 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.

a. **2-wire, E.L.R.** (E.L.R. meets fail-safe/monitored device specifications) electric sensing edge extending full width of door bottom bar. Provide a [retracting safety cord and reel] [self-coiling cable] connection to control circuit.

a. **NEMA 4X photo eye sensors** consisting of a transmitter and receiver that are to be mounted within 6” (152.4 mm) of the counter/floor, projecting an IR beam across the entire width of the door. Electrical contractor to provide low voltage wiring from the transmitter and receiver to the door operator.

a. **NEMA 1 photo eye sensors** consisting of a transmitter and receiver that are to be mounted within 6” (152.4 mm) of the counter/floor, projecting an IR beam across the entire width of the door. 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 Architectural Design Support at (800) 233-8366 ext. 4551 for other options.

2.5 ACCESSORIES

**\*\* NOTE TO SPECIFIER** \*\* Standard locking methods are listed below. Locking is not recommended for motor operated units.

A. **Locking:**

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

1. **None**

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

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

a. Standard Mortise Cylinder

a. BEST 7-Pin

a. U-Change

a. Schlage

\*\* **NOTE TO SPECIFIER** \*\* Plastic laminate countertops are available for openings up to 15’-0” (4.57 m) wide. 12” (305 mm) minimum sill depth; 36” (914 mm) maximum sill depth. Select one of the following.

B. **Countertop:**

1. **Plastic laminate covered:** 1-1/4” (32 mm) thick, of size and configuration for opening size and wall construction. Color as selected by Architect from standard range of Wilson Art or Formica plastic laminates.

\*\* **NOTE TO SPECIFIER** \*\* Stainless steel countertops are available for openings up to 11’-0” (3.35 m) wide with sill depths up to 20” (508 mm).

1. **Stainless steel 14 gauge type 304 #4 finish:** [“T” shaped design for face of wall mounted unit] [Rectangular shape design for between jambs mounted unit] of size and configuration for opening size and wall construction

\*\* **NOTE TO SPECIFIER** \*\* 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.

C. **Operator and Bracket Mechanism Cover:**

Minimum [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 matching door hood.

D. **Fixed Panel**: Static grille curtain with frame assembly to fill adjacent space(s) around coiling grille.  Finish and pattern to match coiling grille.

**\*\* 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

A. 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**