SECTION 08 33 00

CrossingGard® Emergency EGRESS Grille

Per 2009 International Building Code

 Access-Controlled Egress Requirements

**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 ars 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, e.G.: \_\_\_\_\_\_\_\_\_\_\_\_.

**PART 1** GENERAL

1.1 SUMMARY

A. **Section Includes:** Electrically operated access-controlled egress rolling grilles that provide alarm and fail-safe automatic opening emergency response and automatic locking capabilities.

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.

5. 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.

2. IBC/ANSI A117 compliant Emergency Exit Push-Button Station and Signage.

3. Local Horn/Strobe Alarm for Emergency Exit Push-Button Station.

1.2 SYSTEM DESCRIPTION

A. **Design Requirements:**

**Note: standard sizes below, consult factory for additional sizes.**

1. Applicable Unit Sizes

a. **Width:** 5’-0” (1.52 M) minimum; 24’-0” (7.32 M) maximum – Distance Between Guides

b. **Height:** up to 20’-0” (6.10 M) – Clear Opening Height

B. **Cycle Life:**

1. Standard construction for normal use of up to 20 cycle per day maximum

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

C. Custom Layout

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

D. 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

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 rolling grille 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**

3. **Clopay Building Products**

**Substitutions:** Not permitted

2.2 PRODUCT INFORMATION

A. **Model:** [ERG-IBC] [ERG10]

2.3 MATERIALS

A. **Curtain (Rods & Chains):**

1. **Horizontal Rods:** Solid [5/16 inch (8 mm) diameter, 5056 H32 aluminum alloy] [5/16 inch (8 mm) diameter, AISI 300 series stainless steel] [5/16 inch (8 mm) diameter galvanized steel].

a. **Vertical Spacing:** 2 inches (50.8 mm) on center.

\*\* **NOTE TO SPECIFIER** \*\* Select aluminum chain links below for aluminum and galvanized rods and stainless steel links for stainless steel rods.

2. **Vertical Chains:** Eyeletted [aluminum] [stainless steel] links, 3/4 inch (19 mm) wide, positioned by E-rings on [9 inch (228.6 mm)] [6 inch (152.4 mm)] [3 inch (76.2 mm)] centers. Provide double E-rings on horizontal bars on both sides of end chains to retain curtain in guides.

B. **Curtain and Bottom Bar:**

1. **Fabrication & Finish:**

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

a. **Aluminum Curtain with Aluminum Bottom Bar:**

1) **Curtain:** [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized]

2) **Bottom Bar:** Extruded aluminum tubular section, minimum 2 x 3-1/2 inch (50.8 x 88.9 mm). Finish to match curtain

a. **Stainless Steel Curtain with Aluminum Bottom Bar:**

1) **Curtain:** Factory polished

2) **Bottom Bar:** Extruded aluminum tubular section, minimum 2 x 3-1/2 inch (50.8 x 88.9 mm). **Finish:** [Clear anodized] [Mill finish]

a. **Stainless Steel Curtain with Stainless Steel Bottom Bar**

1) **Curtain:** Factory polished

2) **Bottom Bar:** Back to back stainless steel angles, 3 x 2 x minimum 1/8 inch (76.2 x 50.8 x minimum 3.2 mm) on fascia side and 2 x 2 x 1/8 inch (50.8 x 50.8 x 3.2 mm) on coil side. Factory polished.

a. **Galvanized Steel Curtain with Aluminum Chains and Aluminum Bottom Bar:**

1) **Curtain (Rods):** Galvanized steel, unpainted

2) **Chains and Bottom Bar:** Extruded aluminum tubular section, minimum 2 x 3-1/2 inch (50.8 x 88.9 mm). **Finish:** [Clear anodized] [Mill finish]

C. **Guides:**

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

1. **Mounting:**

a. **Wall Mounted:** Heavy duty extruded aluminum sections with snap-on cover to conceal fasteners and polypropylene pile runners on both sides of curtain. Provide [steel] [aluminum] mounting angle as required for face of wall installation.

a. **Tube Mounted:** Heavy duty extruded aluminum sections with snap-on cover to conceal fasteners and polypropylene pile runners on both sides of curtain. Provide [steel] [aluminum] tubes, floor saddles and hardware as recommended by manufacturer to support grille.

2. **Finish:**

\*\* **NOTE TO SPECIFIER** \*\* Select one of the following. If guides are exposed, select powder coated to match. If components are recessed in wall, steel components will remain unpainted.

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

a. **Steel:** [Powder coated to match guide finish] [Unpainted]

D. **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 and balanced for fail-safe automatic opening of grille. Provide wheel for applying and adjusting spring torque.

E. **Brackets:** Fabricate from minimum 1/4 inch (6.35 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. **Powder Coat (Stock Color):** Zirconium treatment followed by a gray baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

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

F. **Hood and Fascia:** [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. **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] [white] [tan] baked-on polyester enamel finish coat

a. **Stainless steel:** #4 type 304 finish

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

2.4 OPERATION

A. **AlarmGard Series Motor Operated:** Model FS, UL listed, NEMA 1 enclosure rating, horsepower as recommended by manufacturer, [115v single] [230v single] [208/230v three] [460v three] phase service. Provide open drip-proof motor, removable without affecting setting of limit switches; UL listed thermal overload protection; solenoid brake; planetary reduction gearing and rotary limit switches; transformer with 24 v control secondary; and all integral electrical components prewired to terminal blocks.

1. Automatic open feature shall be activated by [local smoke/fire detector,] [central smoke/fire alarm system,] emergency exit push-button station or power failure.

2. Upon release of solenoid brake, grille shall open automatically without the use of electric power maintaining an average speed of not less than 6” (152 mm) nor more than 9” (229 mm) per second.

3. System shall not require any type of battery power source.

4. Grille shall be fail-safe and open upon power failure.

5. Upon restoration of power and clearing of the alarm signal or resetting of emergency exit push-button station, grille shall be immediately ready for normal operation by use of the control station.

6. The electrical contractor shall mount the control station(s), emergency exit push-button station, local horn/strobe alarm for emergency exit push-button station and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions.

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

a. **Emergency Exit Push-Button Station with Keyed Reset, Local Horn/Strobe Alarm and Signage** that reads “Push To Exit – Alarm Will Sound”

a. **Emergency Exit Push-Button Station with Keyed Reset and Signage** that reads “Push To Exit”

\*\* **NOTE TO SPECIFIER** \*\* Standard control station required for normal open/close operation. Most common control stations are listed below; consult Architectural Design Support at (800) 233-8366 ext. 4551 for other options. CrossingGard grilles will be wired for constant pressure open and close. Grilles provided with a bottom sensing edge can be wired for momentary pressure close.

B. **Control Station:**

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

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

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

C. **Control Operation:**

1. **Constant pressure to close:**

a. No sensing device required

a. 2-wire, electric sensing edge seal extending full width of door bottom bar. 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 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 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 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.

2.5 ACCESSORIES

A. **Locking:**

1. **Concealed Self Locking Mechanism:** AutoLock manual lifting jamb lock assemblies that will prevent forced opening of a closed grille. Lock mechanism shall not interfere with normal electric operation, fail-safe or emergency response self opening features.

\*\* **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.

B. **Operator and Bracket Mechanism Cover:** Material and finish to match door hood.

C. **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 \*\*** Vibration isolators not available for units requiring wind load or seismic validation. Delete below if not required.

1. **Vibration Isolators:**
	1. Include continuous vibration isolators pre-installed on both guides to reduce vibration transferred from the door to the structure. Vibration isolators should be expected to reduce vibration by up to 14%. Dampening pads are to be manufactured from nitrile oil-resistant rubber, durometer 50A.

**\*\* 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. General: Install grille 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 grilles for ease of operation, free from warp, twist, or distortion.

3.4 FIELD QUALITY CONTROL

A. Site Test: Test grilles for normal operation and the emergency opening feature by means of alarm, power failure and emergency exit push-button station at door opening. Coordinate with Authority Having Jurisdiction to witness test.

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 to Owner's Representative.

B. Provide the Owner Representative with detailed instructions for maintenance procedures and to address the annual testing requirement of the grilles.

**END OF SECTION**