

SECTION 08 33 00

CrossingGard® Emergency Response 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 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 GRILLE 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: Electrically operated access-controlled egress rolling grilles that provide alarm and fail-safe automatic opening emergency response and automatic locking capabilities. Provide an ICC-ES evaluation report covering the provisions of Section 1008.1.4.4 of the 2009 International Building Code.
- 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 and ICC/ANSI A117 compliant Emergency Exit Push-Button Station and Signage.
 - 3. Local Horn/Strobe Alarm for Emergency Exit Push-Button Station.

INCLUDE APPROPRIATE LANGUAGE BELOW, INCLUDING A REFERENCE TO SECTION 01 23 00 ALTERNATES, IF EMERGENCY RESPONSE ROLLING GRILLES ARE INCLUDED IN ANY ALTERNATES, ADD SECTION 01 23 00 TO 1.1 B. DELETE IF NO ALTERNATES.

D. Alternates:

1.2 SYSTEM DESCRIPTION

A. Design Requirements:

1. Applicable Unit Sizes
 - a. Width: 5'-0" (1.52 M) minimum; 24'-0" (7.32 M) maximum – Distance Between Guides
 - b. Height: 4'-0" (1.22 M) minimum; 20'-0" (6.10 M) maximum – Clear Opening Height
2. Cycle Life:
 - a. Design grilles of standard construction for normal use of up to 20 cycle per day maximum.

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 ICC-ES evaluation report number for access-controlled egress door approval.
 - b. Provide proof of manufacturer ISO 9001:2008 registration.
 - c. Provide proof of manufacturer and installer qualifications - see 1.4 below.
 - d. 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 9001:2008 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: Cornell Iron Works, Inc., Crestwood Industrial Park, Mountaintop, PA 18707. Telephone: (800) 233-8366, Fax: (800) 526-0841. Underwriters Laboratories, Inc. (UL), ISO 9001:2008 Registered.

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

1. Distributor:

B. Model: ERG-IBC

C. Substitutions: Reference Section 01 25 13 Product Substitution Procedures.

2.2 MATERIALS

A. Curtain:

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.

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.
3. Bottom Bar: Extruded aluminum tubular section, 2 x 3-1/2 inch (50.8 x 88.9 mm).

OR

3. 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.
4. Finish:
 - a. Aluminum Curtain and Bottom Bar:
 1. Curtain: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].
 2. Bottom Bar: [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].

OR

- a. Stainless Steel Curtain with Aluminum Bottom Bar:
 1. Curtain: Factory polished.
 2. Bottom Bar: [Clear anodized] [Mill finish].

OR

- a. Stainless Steel Curtain with Stainless Steel Bottom Bar: Factory polished.

OR

- a. Galvanized Steel Rods with Aluminum Chains and Bottom Bar:
 1. Rods: Galvanized steel, unpainted.
 2. Chains and Bottom Bar: [Mill finish] [Clear anodized].

- B. Guides, 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.

OR

- B. Guides, 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.

1. Finish, Aluminum Guide Components:
 - a. [Mill finish] [Clear anodized] [Medium bronze anodized] [Dark bronze anodized] [Black anodized].

DELETE (2.) BELOW WHEN NOT USING ANY STEEL COMPONENTS IN SECTION 2.2 B ABOVE.

2. Finish, Steel [Mounting Angles] [Tubes]:

USE POWDER COAT FINISH FOR EXPOSED STEEL GUIDE COMPONENTS AND UNPAINTED WHEN STEEL GUIDE COMPONENTS ARE RECESSED IN THE WALL.

- a. Unpainted.

OR

- a. 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.

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

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

OR

1. Finish: 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

1. ASTM A 123, Grade 85 zinc coating, hot-dip galvanized after fabrication.

HOODS ARE NOT NORMALLY PROVIDED FOR COIL ABOVE CEILING APPLICATION, DELETE HOOD BELOW IF NOT DESIRED.

E. 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 to include an ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation of a chemical bonding, light gray baked-on polyester base coat and a light gray baked-on polyester finish coat. The scientific organic material composition and chemical bonding process of GalvaNex™ produces a superior finish against corrosion and abrasion. GalvaNex™ components include a limited two year finish warranty.

OR

- a. Stainless Steel: No. 4 finish.

OR

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

2.3 ACCESSORIES

A. Locking:

- 1. Concealed Self Locking Mechanism: Provide 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.

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: 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. M100 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. Automatic open feature shall be activated by [local smoke/fire detector,] [central smoke/fire alarm system,] emergency exit push-button station or power failure. 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. System shall not require any type of battery power source. Grille shall be fail-safe and open upon power failure. 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. 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.

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

OR

- 1. Emergency Exit Push-Button Station with Keyed Reset and Signage that reads "Push To Exit"

STANDARD CONTROL STATION REQUIRED FOR NORMAL OPEN/CLOSE OPERATION. MOST COMMON CONTROL STATIONS ARE LISTED BELOW; CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 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.

- 2. Control Station: Flush mounted, "Open/Close/Stop" push buttons; NEMA 1B.

OR

- 2. Control Station: Flush mounted, "Open/Close" key switch with "Stop" push button; NEMA 1B.

CONSTANT PRESSURE OPEN AND CLOSE OPERATION IS RECOMMENDED FOR MOTOR OPERATED CROSSINGGARD GRILLES. AN APPROVED PRIMARY ENTRAPMENT PROTECTION

DEVICE WILL PERMIT MOTOR OPERATORS TO FUNCTION WITH MOMENTARY CONTACT CLOSE OPERATION. SELECT DESIRED OPERATION FROM SECTION "B" BELOW.

B. Provide operator to function with constant pressure open and close operation.

OR

B. Entrapment Protection: Provide the following primary entrapment protection device to enable momentary contact close operation.

1. Provide a 2-wire, E.L.R. electric sensing edge extending full width of grille bottom bar. Contact before grille fully closes shall cause grille to immediately stop downward travel. Provide a [retracting safety cord and reel] [self-coiling cable] connection to control circuit.

OR

1. Provide 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 grille. Interruption of beam before grille fully closes shall cause grille 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 grille operator.

OR

1. Provide 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 grille. Interruption of beam before grille fully closes shall cause grille 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 grille operator.

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