

SECTION 08330

CrossingGard™ **EMERGENCY RESPONSE SECURITY GRILLE** **with FAIL-SAFE AUTOMATIC OPENING OPERATION**

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 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: Electric operated vertical rolling grilles with fail-safe, emergency response, automatic opening capabilities.
- 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.
 - 5. Division 16. 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.

INCLUDE APPROPRIATE LANGUAGE BELOW, INCLUDING A REFERENCE TO SECTION 01230 ALTERNATES, IF EMERGENCY RESPONSE ROLLING GRILLES 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. 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 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. Provide proof of manufacturer ISO 9001:2000 registration.
 - b. Provide proof of 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 9001:2000 registered and a minimum of five years experience in producing grilles of the type specified.
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 9001:2000 Registered.

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

1. Distributor:

B. Model: ERG10

C. Substitutions: Reference Section 01630 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].

1 1/2" (38.1 mm) SPACING IS NOT AVAILABLE ON STAINLESS STEEL CURTAINS.

- a. Vertical Spacing: [2 inches (50.8 mm)] [1-1/2 inches (38.1 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,] 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" nor more than 9" 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, grille shall be immediately ready for normal operation by use of the control station.

MOST COMMON CONTROL STATIONS ARE LISTED BELOW; CONSULT CORNELL ENGINEERING SERVICES (800) 233-8366 EXT. 551 OR 641 FOR OTHER OPTIONS. CROSSINGGARD GRILLES WILL BE WIRED FOR CONSTANT PRESSURE OPEN. GRILLES WITHOUT A BOTTOM SENSING EDGE MUST BE WIRED FOR CONSTANT PRESSURE CLOSE.

- 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: Surface mounted, "Open/Close" push buttons; NEMA 1.

OR

- 1. Control Station: Surface mounted, "Open/Close" key switch; NEMA 3R.

OR

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

OR

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

SENSING EDGE IS RECOMMENDED WITH MOTOR OPERATED UNITS, BUT IS NOT REQUIRED; DELETE IF NOT DESIRED.

- B. Sensing Edge: Provide automatic stop control by an automatic sensing switch within neoprene or rubber astragal extending full width of grille bottom bar.

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 grille fully closes shall cause grille to immediately 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 grille operation preventing damage, injury or death due to an inoperable sensing edge system.

OR

- 1. Provide an electric sensing edge device. Contact before grille fully closes shall cause grille to immediately 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 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 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