

## SECTION 08 33 00

### VisionAire® ROLLING GRILLES – OPEN DESIGN

#### 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: [Manual] [and] [electric operated] overhead rolling grilles.
- 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. Masterkeyed cylinders.
  - 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. Manual release pull handle.

INCLUDE APPROPRIATE LANGUAGE BELOW, INCLUDING A REFERENCE TO SECTION 01 23 00 ALTERNATES, IF 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. Cycle Life:

- a. Design grilles of standard construction for normal use of up to 5 cycles per day maximum.

OR

- a. Design grilles of special construction for high cycle use. Expected cycles of up to \_\_\_\_ per day.

## 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 proof of manufacturer ISO 9001:2000 registration.
  - b. Provide proof of manufacturer and installer qualifications - see 1.3 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 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 9001:2000 Registered.

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

- 1. Distributor:

SELECT MODEL ESG10 FOR STRAIGHT PATTERN GRILLES OR MODEL ESG12 FOR GRILLES THAT WILL BE ROUTINELY CYCLED MORE THAN 5 TIMES PER DAY OR WHEN A BRICK PATTERN CURTAIN CONFIGURATION IS DESIRED.

- B. Model: [ESG10] [ESG12]

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

### **2.2 MATERIALS**

- A. Curtain:

- 1. ESG10 Straight Pattern

- a. 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. 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.

- b. Vertical Chains: Grommetted [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.

OR

- 2. ESG12 Brick Pattern

- a. Horizontal Rods: Solid 5/16 inch (8 mm) diameter, 5056 H32 aluminum alloy sleeved with horizontal aluminum tube spacers to separate vertical links.
  - 1. Vertical Spacing 2 inches (50.8 mm)
- b. Vertical Links: Heavy duty aluminum links, 3/4 inch (19mm) wide, positioned by tube spacers on 9 inch (228.6 mm) staggered centers. End links to be held in place by self-locking retaining rings.

INCLUDE REINFORCING ANGLES NOTED BELOW ON GRILLES OVER 27'-4" (8.33 M) WIDE.

3. Bottom Bar: 2 x 3-1/2 inch (50.8 x 88.9 mm) extruded aluminum tubular section [reinforced with 3 x 2 x 3/16 inch (76.2 x 50.8 x 4.76 mm) aluminum angle(s)].

SELECT ALUMINUM CURTAIN AND BOTTOM BAR BELOW FOR MODEL ESG12 BRICK PATTERN GRILLES. STAINLESS AND GALVANIZED FINISHES ARE NOT AVAILABLE WITH BRICK PATTERN CURTAINS.

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 for proper balance of grille to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.

D. Brackets: Fabricate from minimum 3/16 inch (4.76 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

TO PROVIDE SECURITY, A LOCKING MECHANISM IS REQUIRED ON ALL GRILLES. MOST COMMON LOCKING METHODS ARE LISTED BELOW; CONSULT CORNELL ARCHITECTURAL DESIGN SERVICES (800) 233-8366 EXT. 551 FOR OTHER OPTIONS. EMERGENCY EGRESS LOCK MUST BE USED WITH EMERGENCY EGRESS SYSTEM.

A. Locking:

1. Manual Push-Up: Keyed cylinder locking into both jambs operable from both sides of curtain.

OR

1. Manual Crank Hoist: Keyed cylinder locking into both jambs operable from coil side of curtain.

OR

1. Motor Operated: Keyed cylinder locking into both jambs operable from both sides of curtain with motor interlock cutout switches.

OR

1. Emergency Egress Lock: Key cylinder locking from public side, thumbturn cylinder locking from tenant side, locking into both jambs. Provide an additional security panel in curtain. [Provide motor interlock cutout switches on motorized units.]

FOLLOWING EMERGENCY EGRESS SYSTEM CAN BE USED WITH MG MOTOR OPERATORS.

- B. Emergency Egress System: Provide wall mounted manual release system pull handle to disengage motor operator and automatically open grille for emergency egress without the use of electrical power. Release of pull handle will reset grille to normal motor operation.

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: 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. Manual Push-Up: Provide pole with hook. Suitable for model ESG10 aluminum grilles up to 16' (4.88 M) wide and up to 10' (3.05 M) high and model ESG12 aluminum grilles up to 14' (4.27 M) wide and up to 10' (3.05 M) high.

OR

EZ LIFT CONSTRUCTION PACKAGE EXTENDS THE WIDTH RANGE OF ALL STANDARD CONSTRUCTION PUSH-UP GRILLES BY APPROXIMATELY 33%. USE FOR PUSH-UP GRILLES THAT EXCEED THE SIZE LIMITS FOR STANDARD PUSH-UP CONSTRUCTION LISTED ABOVE. ALTHOUGH POSSIBLE TO BUILD, CORNELL DOES NOT RECOMMEND PUSH-UP OPERATION FOR UNITS TALLER THAN 10' (3.05 M) HIGH. CONSULT CORNELL ARCHITECTURAL DESIGN SERVICES (800) 233-8366 EXT. 551 FOR EZ LIFT LIMITATIONS ON GALVANIZED AND STAINLESS STEEL GRILLES.

- A. Manual Push-Up with EZ Lift Construction Package: Provide pole with hook. Suitable for aluminum grilles up to 22' (6.70 M) wide and up to 10' (3.05 M) high.

OR

- A. Manual Crank Hoist: Provide 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.

OR

SELECT MODEL MG OPERATORS FOR UNITS THAT WILL ROUTINELY CYLCE LESS THAN 20 TIMES PER DAY AND REQUIRE NO MORE THAN 3/4 HP. SELECT SG OPERATORS FOR UNITS THAT WILL CYCLE MORE THAN 20 TIMES PER DAY AND FOR LARGE SIZE UNITS THAT WILL REQUIRE GREATER THAN 3/4 HP.

- A. Supply Cornell Model MG, industrial duty - rated for a maximum of 20 cycles per hour, cULus listed, 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 6 to 9 inches per second (15 to 23 cm/sec). 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.

OR

- A. Supply Cornell Model SG, continuous duty, cULus listed, 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 6 to 9 inches per second (15 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.

MOST COMMON CONTROL STATIONS ARE LISTED BELOW; CONSULT CORNELL ARCHITECTURAL DESIGN SERVICES (800) 233-8366 EXT. 551 FOR OTHER OPTIONS. GRILLES WITHOUT A BOTTOM SENSING EDGE MUST BE WIRED FOR CONSTANT PRESSURE ON THE "CLOSE" BUTTON.

- 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 [reversing] [stop] control by an automatic sensing switch within neoprene astragal extending full width of grille bottom bar.
  - 1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide a self-monitoring wireless sensing edge connection to motor operator eliminating the need for a physical traveling electric cord connection between bottom bar sensing edge device and motor operator. Supervised system alters normal door operation preventing damage, injury or death due to an inoperable sensing edge system.  
OR
  - 1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [stop downward travel]. Provide a wireless sensing edge connection to motor operator eliminating the need for a physical traveling electric cord connection between bottom bar sensing edge device and motor operator.  
OR
  - 1. Provide an electric sensing edge device. Contact before door fully closes shall cause door to immediately [stop downward travel and reverse direction to the fully opened position] [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