SECTION 08 33 00

**[VisionAire®] [5015] CrossingGard with ThreatProtect® Emergency Response Grille**

**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.: \_\_\_\_\_\_\_\_\_\_\_.

**PART 1 GENERAL**

1.1 SUMMARY

 A. **Section Includes:** 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.

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

1.2 SYSTEM DESCRIPTION

 A. **Design Requirements:**

1. **Emergency Response:** Automatic alarm response to open or close the grille

depending on alarm signal type.

2. **Cycle Life:**

a. Design grilles of standard construction for normal use of up to 5 cycles per day maximum, and an overall maximum of 50,000 operating cycles for the life of the grille.

\*\*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 proof of manufacturer ISO 9001:2015 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 9001:2015 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

1. **Manufacturer:**
2. Cornell - 24 Elmwood Ave. Mountain Top, PA 18707. Telephone: (800) 233-8366. Underwriters Laboratories, Inc. (UL), ISO 9001:2008 Registered.
3. Cookson
4. Clopay

\*\* **NOTE TO SPECIFIER \*\*** 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:** [ERG10T VisionAire] [ERG15T 5015 Heavy Duty]

C. **Approved Equal:** Cookson - 1901 South Litchfield Rd, Goodyear, AZ, 85338. Telephone: (800) 294-4358.

D. **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.

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

 1. **5015 Straight Pattern**

a. **Horizontal Rods:** Solid 5/16 inch (8 mm) diameter, horizontal [aluminum] [stainless steel] rods with 1/2” tube spacers on 1-1/2” centers with 3/16" thick [aluminum] [stainless steel] hinged vertical connecting links (5/8" deep by 2 1/4" high) [9”] [6”] on center.

\*\* **NOTE TO SPECIFIER \*\*** Include reinforcing angles noted below on grilles over 27’-4” (8.33 M) wide.

2. **Bottom Bar:** 2 x 3-1/2 inch (50.8 x 88.9 mm) extruded aluminum tubular section reinforced with 3 x2 x 3/16 inch (76.2 x 50.8 x 4.76 mm) aluminum angle(s).

\*\* **NOTE TO SPECIFIER \*\*** Select aluminum curtain and bottom bar below for model ESG12 brick pattern grilles. Stainless and galvanized finishes are not available with brick pattern curtains.

 3. **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].

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

 1. **Curtain:** Factory polished.

 2. **Bottom Bar:** [Clear anodized] [Mill finish].

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

 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.

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].

\*\* **NOTE TO SPECIFIER \*\*** Delete (2.) below when not using any steel components in section 2.2 B above.

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

\*\* **NOTE TO SPECIFIER \*\*** Use powder coat finish for exposed steel guide components and unpainted when steel guide components are recessed in the wall.

 a. Unpainted.

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

a. Zirconium 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:**

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

a. Zirconium treatment followed by a corrosion inhibitive baked-on zinc-rich gray polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness.

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

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

 a. **Stainless Steel:** No. 4 finish.

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

2.3 ACCESSORIES

\*\* **NOTE TO SPECIFIER \*\*** To provide security a locking mechanism is required on all grilles. Most common locking methods are listed below; consult Architectural Design Support (800) 233-8366 Ext. 4551 for other options. Emergency egress lock must be used with emergency egress system.

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.

1. **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. **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.

2.4 OPERATION

 A. **ThreatProtect Electric Motor Operator with back-up power control box**, Limited Duty (up to 10 cycles per hour), cULus listed, TENV gear head operator, 24DVC. Horsepower as recommended by manufacturer. Provide complete with electric motor and factory pre-wired motor control terminals, maintenance free solenoid actuated brake, emergency manual chain hoist 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 maintenance free, sealed gear box with mechanical braking to hold the door in any position. 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 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 motor shall be removable without affecting the limit switch settings. The electrical contractor shall mount the control stations and supply the appropriate disconnect switch, all conduit and wiring per the overhead door wiring instructions.

 1. **Supply model ThreatProtect 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 minimum 10 open/close cycles and 48 hr stand-by.

a. (2) 12v rechargeable lead sealed batteries.

b. Programmable battery load testing

c. Monitoring points for open/close position, AC power loss and battery low voltage

d. 12’-0” (standard) wiring whip to connect control box and motor

 (up to 120’-0” available)

e. 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.

f. Non-resettable cycle counter

g. UL325 & UL864 compliant system.

**h. Emergency open alarm input**

**i. Hostile Event alarm input**

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

C. **Primary Entrapment:** Fail- safe, UL325-2010 Compliant Entrapment Protection for Motor

Operation

a. **Continuously monitored, wireless sensing/weather edge** seal extending full width of door bottom bar.

**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