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**PART 1 GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 SUMMARY**

- A. This Section includes:
1. Open-curtain overhead coiling grilles.
- B. Related Requirements:
1. Division 1 Section "Sustainable Design Requirements".
  2. Division 5 Section "Metal Fabrications" for miscellaneous steel supports, angle-framing of grille opening, corner guards, and bollards.

**1.3 QUALITY ASSURANCE**

- A. The work of this section shall be performed by a company which specializes in the type of overhead coiling grilles work required for this Project, with a minimum of 5 years of documented successful experience and shall be performed by skilled workmen thoroughly experienced in the necessary crafts.
1. Work shall be performed in compliance with Owner's insurance underwriters' requirements and UL approvals and testing for materials, assemblies and procedures.
- B. Manufacturer shall specialize in manufacturing the type of overhead coiling grilles specified in this section, with a minimum of 5 years of documented successful experience, and have the facilities capable of meeting all requirements of Contract Documents as a single-source responsibility and warranty.
- C. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.
- D. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC A117.1.
- E. Manufacturer's identification tags or marks are not acceptable on surfaces which will remain exposed to view after installation.
1. Evidence of "patching" after removal of tags or marks is not acceptable.

**1.4 ACTION SUBMITTALS**

- A. Submit the following according to Conditions of the Construction Contract and Division 1 Specification Sections.
- B. Product Data: For each type and size of overhead coiling grille and accessory.
1. Include construction details, material descriptions, dimensions of individual components, profiles for curtain components, and finishes.
  2. Include rated capacities, operating characteristics, electrical characteristics, and furnished accessories.
- C. LEED Submittals:
1. MRc4 – List all materials with recycled content indicating material cost broken out by post-industrial (pre-consumer) and post-consumer content. Only include data for materials permanently installed on the project site.
  2. MRc5 – List all materials with regional content indicated the cost and percentage of each material or fraction of each material (by weight) that is extracted, harvested or recovered as well as manufactured within 500 miles of the project site – 101 First Street, San Francisco, CA.
- D. Shop Drawings: For each installation and for special components not dimensioned or detailed in manufacturer's product data.
1. Include plans, elevations, sections, and mounting details.
  2. Include details of equipment assemblies. Indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.
  3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.

4. For exterior components, include details of provisions for assembly expansion and contraction.
  5. Show locations of controls, locking devices, and other accessories.
  6. Include diagrams for power, signal, and control wiring.
- E. Samples for Verification: For each type of exposed finish on the following components, in manufacturer's standard sizes:
1. Open-curtain grille with full-size components consisting of rods, spacers, and links as required to illustrate each assembly.
  2. Bottom bar with sensor edge.
  3. Guides.
  4. Mounting frame.
  5. Brackets.
  6. Hood.
- F. Hazardous Materials Notification: In the event no product or material is available that does not contain asbestos, PCB or other hazardous materials as determined by the Owner, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for that proposed product or material prior to installation.
- G. Asbestos and PCB Certification: After completion of installation, but prior to Substantial Completion, Contractor shall certify in writing that products and materials installed, and processes used, do not contain asbestos or polychlorinated biphenyls (PCB), using format in Article 3 of General Conditions.
- 1.5 INFORMATIONAL SUBMITTALS**
- A. Qualification Data: For Installer.
- 1.6 CLOSEOUT SUBMITTALS**
- A. Maintenance Data: For overhead coiling grilles to include in maintenance manuals.
- 1.7 DELIVERY, STORAGE, AND HANDLING**
- A. Comply with General Conditions and Division 1 Section "Product Requirements".
- 1.8 WARRANTY**
- A. Comply with General Conditions and Division 1 Section "Product Requirements" agreeing to repair or replace specified materials or Work that has failed within the warranty period. Failures include but are not limited to the following:
1. Surface defects.
  2. Inadequate or misplaced hardware reinforcement.
  3. Improper operation of grilles.

## **PART 2 PRODUCTS**

### **2.1 UNAUTHORIZED MATERIALS**

- A. Materials and products required for work of this section shall not contain asbestos, polychlorinated biphenyls (PCB) or other hazardous materials identified by the Owner.

### **2.2 ACCEPTABLE MANUFACTURERS**

- A. General: For the purpose of establishing the minimum functional, aesthetic and quality standards required for work of this section, products of the following manufacturer are specified:
1. The Cookson Company/Gastonia, North Carolina.
  2. Cornell Iron Works, Inc.
  3. Overhead Door Company.
  4. McKeon Door.
- B. Source Limitations: Obtain overhead coiling grilles from single source from single manufacturer.
1. Obtain operators and controls from overhead coiling-grille manufacturer.

- C. Recycled Content: For materials containing post-industrial (pre-consumer) and/or post-consumer recycled content, contractor shall document the cost and percentage (by weight) of each material broken out by post-industrial (pre-consumer) and post-consumer content.
- D. Regional Content: For material that is extracted, harvested or recovered as well as manufactured within 500 miles of the project site – 101 First Street, San Francisco, CA, contractor shall document the cost and percentage (by weight) of each material that is regional.
- E. Substitutions: Comply with General Conditions using form in Division 1 Section “Substitution Request Form”.

### 2.3 MOTOR OPERATED OVERHEAD COILING GRILLE

- A. Type: Cookson "JMG" overhead grille of aluminum construction, motor with belt drive and roller chain sprocket reducer, complete with Design G5015-M9 curtain, 5/16 inch diameter horizontal rods spaced approximately 2 inches o.c. and 1/8 inch aluminum hinged vertical connecting links (5/8 inch deep by 3-3/4 inches high) spaced 9 inches o.c., complete with tubular bottom bar and end locks.
  - 1. Aluminum: ASTM B221 with clear anodized finish.
- B. The bottom bar shall consist of an extruded aluminum tube measuring 4 inches high by 1-3/4 inches deep and shall include the Cookson Featheredge safety edge system.
  - 1. The finish on the bottom bar shall be 204-R1 clear anodized.
- C. The guides shall be constructed of a continuous aluminum guide spacer connected to 1-1/2 inches x 2-1/2 inches x 1/8 inch thick continuous extruded aluminum guide section.
  - 1. Continuous nylon wearstrips shall be inserted on both sides of the guide to eliminate metal-to-metal contact.
  - 2. The aluminum guide spacer and the aluminum guide shall be mill finish.
- D. The brackets shall be constructed of steel not less than 1/4 inch thick.
  - 1. The finish on the brackets shall be one (1) coat of aluminum prime paint.
- E. The barrel shall be steel tubing of not less than 6 inches in diameter.
  - 1. Oil tempered torsion springs shall be capable of correctly counter balancing the weight of the curtain.
  - 2. The barrel shall be designed to limit the maximum deflection to 0.03 inch per foot of opening width.
  - 3. The springs shall be adjusted by means of an exterior wheel.
  - 4. The finish on the barrel shall be one (1) coat of bronze rust-inhibiting paint.
- F. The hood shall be fabricated from 0.040 aluminum sheet and shall be formed to fit the curvature of the brackets.
  - 1. The finish on the hood shall be 204-R1 clear anodized.
- G. Motor Operator:
  - 1. General: Electric operator assembly of size and capacity recommended by grille manufacturer, complete with electric motor and factory prewired motor controls, gear-reduction unit, brake, remote control stations, and control devices.
  - 2. Type: UL approved heavy-duty type consisting of the following components, which does not require the use of pull levers and chains:
    - a. Heavy-duty hoist type motor, Model GH 75, 560 w, 480 V, 3 phase.
    - b. Gear box with gears designed to AGMA standards running in multi-temperature lubricant.
    - c. Mechanical self-adjusting brake.
    - d. Rotary limit switch.
    - e. Motor Controller: NEMA 4, with overcurrent protection.
    - f. Push-button Station: NEMA 4; three position type, labeled "OPEN-CLOSE-STOP" (key operated).
    - g. Emergency chain operator which is operable when power is off. Provide auxiliary crank at each coiling grille.
  - 3. Interlock device to automatically prevent motor from operating when emergency operator is engaged.
  - 4. Provide removable aluminum enclosure box at each coiling grille, to prevent tampering. Secure box with padlock.
- H. Operation Cycles: Grille components and operators capable of operating for not less than 50,000. One operation cycle is complete when a grille is opened from the closed position to the fully open position and returned to the closed position.

- I. Optional Electrical Features Required:
1. Cookson's "Detectedge": Vinyl-jacketed device mounted on bottom bar to stop or reverse rolling grille when it hits an obstruction, UL approved Class 2-24 Volt system, complying with UL Bulletin 325 which requires the use of this type of safety device on all power-operated doors when close button is not wired for constant pressure.
  2. Keyed Push-button Station: Access only to those having keys.
  3. Time Delay System: Allows door to remain open for periods of fifteen seconds to three minutes, giving pedestrians or vehicles sufficient time to enter or leave, then allow door to automatically close.
  4. Warning Light and Horn: Provide amber flashing warning light and warning horn to warn door is closing or that a vehicle is approaching the exitway.
    - a. Provide 10 second delay in warning being sounded and actual door beginning to close.
    - b. Provide audible and visible warning immediately upon a vehicle engaging a vehicle detection loop.
    - c. Warning light to be positioned to be fully visible to approaching traffic in both directions and to pedestrian traffic along sidewalk in both directions.
    - d. Vehicle detection loops to be positioned to provide maximum warning time when a vehicle is exiting parking area.
    - e. Should door be opened by any device (such as safety edge, photo-eye or keyswitch), door to return to full open position.
    - f. Warning devices to function in same manner upon reactivation to close.
- J. Miscellaneous Accessories:
1. Guides: Extruded aluminum with a return lip to prevent grille from pulling out of guides.
    - a. Guides shall be complete with wear strip to eliminate metal-to-metal contact.
  2. Brackets: Fabricated from steel plate of not less than 1/4 inch thick.
  3. Barrel: Steel tubing, 6 inches diameter minimum, designed to limit maximum deflection to 0.03 inch per foot of opening width.
  4. Grille curtain shall be counter-balanced by oil-tempered torsion 100,000 cycle springs.
- K. Locations:
1. Parking Entrance: Door No. 201.
- L. Size: 25'-5"W x 20'-8 1/2" H.

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.
- B. Examine locations of electrical connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### **3.2 INSTALLATION**

- A. Install overhead coiling grilles and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports, according to manufacturer's written instructions and as specified.
- B. Install overhead coiling grilles, hoods, controls, and operators at the mounting locations indicated for each grille.
- C. Accessibility: Install overhead coiling grilles, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.
- D. Power-Operated Grilles: Install automatic garage grille openers according to UL 325.

#### **3.3 STARTUP SERVICE**

- A. Perform installation and startup checks according to manufacturer's written instructions.
- B. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

- C. Test grille opening when activated by detector, fire-alarm system, emergency-egress release, or self-opening mechanism as required. Reset grille-opening mechanism after successful test.

**3.4 ADJUSTING**

- A. Adjust hardware and moving parts to function smoothly, so that grilles operate easily, free of warp, twist, or distortion.
  - 1. Adjust exterior components to be weather resistant.
- B. Lubricate bearings and sliding parts as recommended by manufacturer.

**3.5 MAINTENANCE SERVICE**

- A. Initial Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of coiling-grille Installer. Include monthly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for grille operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.
  - 1. Perform maintenance, including emergency callback service, during normal working hours.

**3.6 DEMONSTRATION**

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain overhead coiling grilles.

**END OF SECTION**