SECTION 083323 – OVERHEAD COILING DOORS

PART 1 GENERAL

1.1 SUMMARY

A. Drawings and general provisions on the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1. Section Includes: Electric Operated Overhead Insulated Coiling Doors

B. Related Sections:

1. 055000 Metal Fabrications. Door opening head member supports.
2. 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

1.2 SYSTEM DESCRIPTION

A. Design Requirements:

1. Air infiltration to comply with 2012 IECC® (International Energy Conservation Code) requirements of less than 1.0 CFM/SQ FT

2. Wind Loading: Supply doors to with-stand up to (120 mph) maximum wind load.

3. Cycle Life:
   a. Design doors of standard construction for normal use of up to 20 cycles per day maximum, and an overall maximum of 50,000 operating cycles for the life of the door.
4. Insulated Door Slat Material Requirements:
   a. Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84.
   b. Minimum Sound Transmission Class (STC) rating of 27 as tested per ASTM E90.
   c. Minimum R-value of 8.0 as calculated using the ASHRAE Handbook of Fundamentals and U-value of 0.125
   d. Insulation to be CFC Free with an Ozone Depletion Potential (ODP) rating of zero.

1.3 SUBMITTALS

A. Reference Section 013300 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. Wiring Diagrams, with all electrical requirements.
4. Quality Assurance / Control Submittals:

   b. Provide proof of manufacturer and installer qualifications - see 1.4 below.
   c. Provide manufacturer's installation instructions.
5. Close-out Submittals:
   a. Operation and Maintenance Manual.
   b. Certificate stating that installed materials comply with this specification.
   c. See Division 01 for additional Close-Out requirements.

1.4 QUALITY ASSURANCE

A. Qualifications:

   2. Installer Qualifications: Manufacturer's Approval.

1.5 DELIVERY STORAGE AND HANDLING

B. Follow manufacturer's written instructions. Do not apply excessive stresses when stored.

1.6 WARRANTY

A. Standard Warranty: Two (2) years from date of Substantial Completion 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: Basis-of-Design; The Cookson Company, Inc., 2417 S 50th Avenue, Phoenix, AZ 85063-3880. Telephone: (800) 294-4358, Fax: (866) 448-6798.

   1. Model: TMWI
      a. Underwriters Laboratories, Inc. (UL), ISO 9001:2008 Registered.

B. Alternates, subject to compliance with requirements:
   1. Cornell Iron Works
   2. Clopay

2.2 MATERIALS

A. Curtain:

1. Air infiltration rate of 0.66 CFM/SQ FT validated by an independent testing agency. Test report to be made available upon request.

2. Slat Material: No. 6F, (Listed Exterior / Interior):
   a. Galvanized Steel/Galvanized Steel: 20 / 24gauge, Grade 40, ASTM A 653 galvanized steel zinc coating.
   b. Insulation: 7/8 inch (22 mm) foamed-in-place, closed cell urethane.
   c. Total Slat Thickness: 15/16 inch (24 mm).
   d. Slats have a Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84.
   e. Slat has an R-value of 8.0 and an STC rating of 27.

3. Fabricate inter-locking sections with high strength nylon end-locks on alternate slats each secured with two 1/4" (6.35 mm) rivets. Provide wind-locks as required to meet specified wind load of 120 mph.

4. Exterior Slat Finish:
   a. ColorCote™ Coating System to include an ASTM A 653 galvanized base coating, bonderized coating for prime coat adhesion, and factory applied thermosetting powder coating applied with a minimum thickness of 2.5 mils. The color shall be selected by the architect and shall be a custom color.
5. Interior Slat Finish:
   a. ColorCote™ Coating System to include an ASTM A 653 galvanized base coating, bonderized coating for prime coat adhesion, and factory applied thermosetting powder coating applied with a minimum thickness of 2.5 mils. The color shall be selected by the architect and shall be custom color.
6. Curtain Configuration
   a. Standard Curtain configuration.

7. Bottom Bar Finish:
   a. Exterior Face: Match slats.
   b. Interior Face: Powder coat to match slats.

8. Bottom Bar Configuration:
   a. Standard Bottom Bar Configuration. Weather-sealed vinyl-gasket when closed.

B. Guides: Thermal break required. Fabricate with minimum 3/16 inch (4.76 mm) structural steel angles. Provide wind-lock bars of same material when wind-locks are required to meet specified wind load. Top of inner and outer guide angles to be flared out-wards to form bell-mouth for smooth entry of curtain into guides. Provide removable guide stoppers to prevent over travel of curtain and bottom bar.

   1. Finish:
      a. Steel: Factory applied baked-on thermosetting powder coat. The finish shall be the same Cookson ColorCote finish as indicated in the curtain section.
   2. Configuration:
      a. Standard Guide Configuration. See Drawings for Details.

C. Counter-balance 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 door to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.

C. Brackets: Fabricate from minimum 3/16 inch (5 mm) steel plate with permanently lubricated ball or roller bearings at rotating support points to support counter-balance shaft assembly and form end closures.

1. Finish:
   a. Steel: Factory applied baked-on thermosetting powder coat. The finish shall be the same custom ColorCote finish as indicated in the curtain section.

D. Hood: 24 gauge galvanized steel 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. Custom ColorCote™ Coating System to include an ASTM A 653 galvanized base coating, bonderized coating for prime coat adhesion, and factory applied thermosetting powder coating applied with a minimum thickness of 2.5 mils. The color shall be selected by the architect and shall be chosen from standard color chart

E. Weather-stripping:

1. Bottom Bar: Replaceable, bulb-style, compressible EDPM gasket extending into guides for a full width weather protected seal.
2 Hood: Neoprene/rayon baffle to impede air flow above coil.

2.3 ACCESSORIES

A. Locking:

1. Manual Chain Hoist: Pad-lockable chain keeper on guide. Stored in bag above hood.

B. Operator Cover: Provide 24 gauge galvanized steel sheet metal cover to provide weather-resistance and to enclose exposed moving operating components at coil area of unit. Finished to match door hood.

2.4 OPERATION

A. Manual Chain Hoist: Provide chain hoist operator with endless steel chain, chain pocket wheel and guard, geared reduction unit, and chain keeper secured to guide.

B. Supply Cookson Model MG Electric Motor Operator, industrial duty - rated for a maximum of 20 cycles per hour, cULus listed, Totally Enclosed Non Ventilated gear head operator(s) rated (1/3) horsepower as recommended by door manufacture for size and type of door, 115 Volts, Single Phase. Provide complete with electric motor and

factory pre-wired motor control terminals, maintenance free solenoid actuated brake. Motor shall be high starting torque, industrial type, protected against over-load 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. Operator drive and door driven sprockets shall be provided with #50 roller chain. Operator when mechanical door locking devices are provided. Operator shall be capable of driving the door at a speed of 8 to 9 inches per second (20 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 over-head door wiring instructions.

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

C. Provide operator to function with constant pressure close operation to meet UL325-2010 listing standard requirements.

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 door 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 doors 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 AND TRAINING

A. Demonstrate and Train proper operation to Owner's Representative.

B. Instruct Owner's Representative in maintenance procedures.

C. See Division 01 for additional requirements.

END OF SECTION 083323