

SECTION 083300 - INSULATED OVERHEAD SERVICE DOORS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Electric operated overhead insulated rolling doors
- B. Related Sections:
 - 1. Section 5 Metal Fabrications. Door opening jamb and head members.
 - 2. Section 6 Rough Carpentry. Door opening jamb and head members.
 - 3. Section 8 Access Doors and Panels. Access doors.
 - 4. Section 8 Hardware.
 - 5. Section 9 Painting. Field painting.
 - 6. 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. Wind Loading:
 - a. Supply doors to withstand up to 20 psf design wind load
 - 2. 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
 - 3. Insulated Door Slat Material Requirements:
 - a. Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84
 - b. Sound Transmission Class (STC) rating up to 30 for the curtain and up to 22 for the entire assembly, as tested per ASTM E90 and based on testing a complete, operable assembly
 - c. Minimum R-value of 8.0 (U-value of 0.125) as calculated using the ASHRAE Handbook of Fundamentals
 - d. Insulation to be CFC Free with an Ozone Depletion Potential (ODP) rating of zero

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 manufacturer ISO 9001:2008 registration
 - b. Provide manufacturer and installer qualifications - see 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 9001:2008 registered and a minimum of five years experience in producing doors 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:
- 1. Basis of Design: Cornell Model ESD20
 - 2. Cookson
 - 3. Clopay Building Products

2.2 MATERIALS

- A. Curtain:
- 1. Fabrication:
 - a. Slat Material: No. 6F, (Listed Exterior/Interior):
 - 1) Galvanized Steel/Galvanized Steel (No Paint Finish):
Manufacturer recommended gauge based on performance requirements. Minimum 24/24 gauge, Grade 40, ASTM A 653 galvanized steel zinc coating.
 - a. Insulation: 7/8 inch (22 mm) foamed-in-place, closed cell urethane
 - b. Total Slat Thickness: 15/16 inch (24 mm)

- c. Flame Spread Index of 0 and a Smoke Developed Index of 10 as tested per ASTM E84
 - d. R-value: 8.0
 - e. STC Rating: Up to 30 for the curtain and up to 22 for the entire assembly, as tested per ASTM E90 and based on testing a complete, operable assembly
- 2. Exterior Slat Finish:
 - a. GalvaNex™ Coating System (Stock Colors):
 - 1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and tan baked-on polyester finish coat
- 3. Interior Slat Finish:
 - a. GalvaNex™ Coating System (Stock Colors):
 - 1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and tan baked-on polyester finish coat
- B. Endlocks: Fabricate interlocking sections with high strength nylon endlocks on alternate slats each secured with two ¼" (6.35 mm) rivets. Provide windlocks as required to meet specified wind load.
 - 1. Nylon: Required up to 21'-5" width (DBG - Distance Between Guides)
- C. Bottom Bar
 - 1. Configuration:
 - a. Insulated Bottom Bar: Reinforced extruded aluminum interior face with full depth insulation and exterior skin slat to match curtain material and gauge. Minimum 4" tall x 1-1/16" thickness.
 - 2. Finish:
 - a. Exterior: Match slats
 - Interior: Mill finish.
- D. Guides:
 - 1. Fabrication:
 - a. Minimum 3/16 inch (4.76 mm) structural steel angles. Provide windlock bars of same material when windlocks are required to meet specified wind load. Top of inner and outer guide angles to be flared outwards to form bellmouth for smooth entry of curtain into guides. Provide removable guide stoppers to prevent over travel of curtain and bottom bar. Top 16 ½" (419.10 mm) of coil side guide angles to be removable for ease of curtain installation and as needed for future curtain service.
 - 2. Finish:
 - a. Powder Coat (Stock Colors): Phosphate treatment followed by a tan baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness

- E. 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 door to ensure that maximum effort to operate will not exceed 25 lbs (110 N). Provide wheel for applying and adjusting spring torque.
- F. Brackets:

Fabricate from minimum 3/16 inch (5 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. Powder Coat (Stock Colors): Phosphate treatment followed by a tan baked-on polyester powder coat; minimum 2.5 mils (0.065 mm) cured film thickness
- G. Hood:

Minimum 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. GalvaNex™ Coating System (Stock Colors):
 - 1) ASTM A 653 galvanized base coating treated with dual process rinsing agents in preparation for chemical bonding baked-on base coat and tan baked-on polyester finish coat
- H. Weatherstripping:
 - 1. Bottom Bar:
 - a. Bottom Bar, Motor Operated Doors: Sensing/weather edge with neoprene astragal extending full width of door bottom bar
 - 2. Guides: Replaceable vinyl strip on guides sealing against fascia side of curtain
 - 3. Lintel Seal: Nylon brush seal fitted at door header to impede air flow

2.3 OPERATION

- A. Motor – Standard Use – Cornell Model MG (Industrial Duty Gear Head) Operator:

The operator must not extend above or below the door coil when mounted front-of-coil. Rated for a maximum of 20 cycles per hour (not to be used for consecutive hours) cULus listed (to comply with UL requirements in The United States and Canada), 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, 120 Volts, 1 Phase. 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, 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. Operator drive and door driven sprockets shall be provided with #50 roller chain. 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 overhead door wiring instructions.

- B. Control Station:
 - 1. Surface mounted: "Open/Close/Stop" push buttons; NEMA 1
- C. Control Operation:
 - 1. Momentary Contact to Close:
Fail-safe, UL325-2010 Compliant Entrapment Protection for Motor Operation.
 - a. 2-wire, E.L.R. electric sensing/weather edge seal extending full width of door bottom bar. Provide a self-coiling cable connection to control circuit.
 - 2. Sensing/Weather Edge: Automatic reversing control by an automatic sensing switch within neoprene or rubber astragal 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 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

- A. Demonstrate proper operation to Owner's Representative
- B. Instruct Owner's Representative in maintenance procedures

END OF SECTION