

**SECTION 08 33 23
OVERHEAD COILING DOORS**

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.02 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the overhead coiling doors as shown on the drawings and/or specified herein, including, but not limited to, the following:
 - 1. Overhead coiling doors.
 - 2. Hardware and accessories.
 - 3. Motor operation.

1.03 REFERENCE STANDARDS

- A. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2025.
- B. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.
- C. UL 864 - Control Units and Accessories for Fire Alarm Systems; Current Edition, Including All Revisions.

1.04 RELATED SECTIONS

- A. Miscellaneous Metals – Section 05 50 00.
- B. ISO Intermodal Shipping Containers – Section 13 42 00.

1.05 QUALITY ASSURANCE

- A. Furnish each overhead coiling door as a complete unit produced by one manufacturer, including hardware, accessories, mounting and installation components.
- B. Provide each type of overhead coiling door by one manufacturer for entire project.
- C. Wind Loading: Design and reinforce exterior overhead coiling doors to withstand a thirty (30) lb. per square foot wind loading pressure, unless otherwise indicated.

1.06 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, roughing-in diagrams, and installation instructions for each type and size of overhead coiling door. Include operating instructions and maintenance information.
- B. Shop Drawings: Submit shop drawings for special components and installations which are not fully dimensioned or detailed on manufacturer's data sheets.

1.07 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

1.08 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of doors that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Provide "Model ESD10" overhead coiling doors as manufactured by Clopay Corporation (Contact : Michael Chapman, ph: 800.233.8366) or approved equal by Wayne Dalton, or Mckeeon meeting these specifications.

2.02 DOOR CURTAIN MATERIALS AND CONSTRUCTION

- A. Shutter Curtain: Fabricate overhead coiling door curtains of interlocking flat slats designed to withstand required wind loading, of continuous length for width of doors, without splices. Provide slats of structural quality , minimum twenty (20) gauge cold-rolled galvanized steel sheets complying with ASTM A 924, Grade A, with G90 zinc coating, complying with ASTM A 653, and phosphate treated before fabrication.
 - 1. Galvanized Steel Perforated: No. 5P, 20 gauge, Grade 40 steel, ASTM A 653 galvanized steel zinc coating perforated with 0.062 inch diameter openings at 0.094 inch staggered centers, and approximately 22 percent free area.
 - 2. Galvanized Steel Non Perforated: No. 5F (prefinished with GalvaNex™ Coating System), Grade 40 steel, ASTM A 653 galvanized steel zinc coating. 22 Gauge as required to meet performance requirements.
 - 3. Finish: Spectrashield Ultra PowderCoat. See Door Schedule for color.
- B. Aluminum: Extruded aluminum, alloy 6063-T5, minimum height 3-3/8", minimum base thickness 3/16", minimum width 4". Two 2 x 2 x 1/8" minimum aluminum angles.
- C. Endlocks: Malleable iron castings galvanized after fabrication, secured to curtain slats with galvanized rivets. Provide locks on alternate curtain slats for curtain alignment and resistance against lateral movement.
- D. Windlocks: Malleable iron castings secured to curtain slats with galvanized rivets. Provide windlocks on roll-up doors approximately twenty-four (24) inches o.c. on both edges of curtain.
- E. Bottom Bar: Consisting of two (2) angles, each not less than 1-1/2" x 1-1/2" x 1/8" thick, either galvanized or stainless steel or aluminum extrusions to suit type of curtain slats.
- F. Curtain Jamb Guides: Fabricate curtain jamb guides of steel angles, or channels and angles with sufficient depth and strength to retain curtain loading. Build up units with minimum 3/16" thick steel sections, galvanized after fabrication. Slot bolt holes for track adjustment.
 - 1. Secure continuous wall angle to wall framing by 3/8" minimum bolts at not more than twenty-four (24) inches o.c. Extend wall angles above overhead coiling door opening head to support coil brackets, unless otherwise shown. Place anchor bolts on exterior wall guides so they are concealed when overhead coiling door is in closed position. Provide removable stops on guides to prevent over-travel of curtain, and continuous bar for holding windlocks.
- G. Weather Seals: Provide vinyl or neoprene weatherstripping for exterior doors. At door heads, use 1/8" thick continuous sheet secured to inside of curtain coil hood. At door jambs, use 1/8" thick continuous strip secured to exterior side of jamb guide.

2.03 COUNTERBALANCING MECHANISM

- A. Counterbalance doors by means of adjustable steel helical torsion spring, mounted around a steel shaft and mounted in a spring barrel and connected to door curtain with required barrel rings. Use grease sealed bearings or self-lubricating graphite bearings for rotating members.
- B. Counterbalance Barrel: Fabricate spring barrel of hot-formed structural quality carbon steel, welded or seamless pipe, of sufficient diameter and wall thickness to support curtain without distortion of slats and limit barrel deflection to not more than 0.03" per foot of span under full load.
- C. Provide spring balance of one or more oil-tempered, heat-treated steel helical torsion springs. Size springs to counterbalance weight of curtain, with uniform adjustment accessible from outside barrel. Provide cast steel barrel plugs to secure ends of springs to barrel and shaft.

- D. Fabricate torsion rod for counterbalance shaft of cast-hardened steel, of required size to hold fixed springs ends and carry torsion load.
- E. Brackets: Provide mounting brackets of manufacturer's standards design, either cast iron or cold-rolled steel plate with bell mouth guide groove for curtain.
- F. Hood: Form to entirely enclose coiled curtain and operating mechanism at opening head, and act as weather seal. Contour to suit end brackets to which hood is attached. Roll and reinforce top and bottom edges for stiffness. Provide closed ends for surface-mounted hoods, and any portion of between-jamb mounting projecting beyond wall face. Provide intermediate support brackets as required to prevent sag.
 - 1. Fabricate steel hoods for doors of not less than twenty (20) gauge hot-dip galvanized steel sheet with G90 zinc coating, complying with ASTM A 525. Phosphate treat before fabrication.

2.04 INSERTS AND ANCHORAGES

- A. Furnish anchoring devices which must be attached to structural steel frame for installation of units. Provide drawings, templates, instructions and directions for installation of anchorage devices. Coordinate delivery with other work to avoid delay.
- B. Refer to Miscellaneous Metals Section of these specifications for installation of anchorage devices.

2.05 STEEL FINISH

- A. Powder-Coat Finish: Custom color (refer to contract drawings) baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

2.06 ELECTRIC DOOR OPERATORS

- A. Furnish electric door operator assembly of size and capacity recommended and provided by door manufacturer; complete with electric motor and factory pre-wired motor controls, gear reduction unit, solenoid operated brake, remote control stations, control devices, conduit and wiring from controls to motor and control stations, and accessories required for proper operation.
 - 1. Electric door operator shall function up to 20 cycles per day.
- B. Provide hand operated disconnect or a mechanism for automatically engaging a sprocket and chain operator and releasing brake for emergency manual operation. Mount disconnect and operator so they are accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.
- C. Design operator so that motor may be removed without disturbing limit switch adjustment and without affecting emergency auxiliary operator.
- D. Door Operator Type: Provide wall or bracket mounted door operator units consisting of electric motor, worm gear drive from motor to reduction gear box, chain or worm gear drive from reduction box to gear wheel mounted on counterbalance shaft, and a disconnect-release for manual operation. Provide motor and drive assembly of horsepower and design as determined by door manufacturer for size of door required.
- E. Electric Motors: Motor – Model EverGard Operator, or approved equal: The 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 the 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 EverGard Motor Control Box 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. Emergency Push Button (EPB): Flush mounted, single red push button station wired for emergency OPEN function only. If grille is at full open (normal business hours), depressing EPB will not affect the grille's position.
 - f. 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 feet away from motor control box.
 - g. Non-resettable cycle counter
 - h. UL 325 & UL 864 compliant system.
2. Motor - Evergard Tube Motor Operator: Complete electric tube motor operator with 120V Single Phase, Nema1 Wall Mounted Control Unit, 24V rechargeable battery back-up, 12 ft long, pre-wired, wiring harness, solenoid actuated brake and speed governor and 3 button push button station. Motor is rated for a maximum of 10 cycles per hour, 24 VDC TENV motor, overload protection, cULus recognized, with a rating as recommended by door manufacturer for size and type of door. Operator shall be capable of driving the door at a speed of 3 to 8 inches per second (8.69 to 0.66 feet/sec). Operator shall also be capable of 12-28 RPM. Fully adjustable mechanical internal worm limit switch mechanism shall synchronize the operator with the door. The electrical contractor shall mount the control stations and supply the appropriate disconnect switch all conduit and wiring per the overhead door wiring instructions. Provide a guide mounted interlock system to prevent damage to the door and operator when mechanical door locking devices are provided.
 - a. Supply model EverGard Motor Control Box 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 power for 10 cycles (25 minutes)
 - 1) (2) 12v rechargeable lead sealed batteries.
 - 2) Programmable battery self-testing
 - 3) Monitoring points for open/close position, AC power loss and battery low voltage
 - 4) 12' wiring whip to connect control box and motor standard (Optional 25', 50', 75' & 120' available)
 - 5) Emergency Push Button (EPB): Flush mounted, single red push button station wired for emergency open function only.
 - 6) 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 feet away from motor control box.
 - 7) Non-resettable cycle counter
 - 8) UL 325 compliant system.
- F. Control Station: Provide momentary contact, 3-button control station with push button controls labeled "open," "close," and "stop."
 1. Provide interior units, full-guarded, surface mounted, heavy duty, with NEMA Type 4 enclosure.
- G. Automatic Reversing Control: Furnish each door with automatic safety switch, extending full width of door bottom, and located within neoprene or rubber astragal mounted to bottom door

rail. Contact with switch before fully closing will immediately stop downward travel and reverse direction to fully opened position. Connect to control circuit through retracting safety cord and reel, or self-coiling cable.

1. Provide electrically actuated automatic bottom bar.
- H. Locking Device: Curtain shall have cylinder locking device, including cylinder and 2 deadbolts, one at each end. Provide electric interlocks that prevent motor from operating when lock is engaged.

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine the areas and conditions where overhead coiling doors are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.02 INSTALLATION

- A. Install overhead coiling door and operating equipment complete with necessary hardware, jamb and head mold strips, anchors, inserts, hangers, and equipment supports in accordance with final
1. Install fire-rated doors to comply with NFPA 80.
- B. Upon completion of installation, including work by other trades, lubricate, test and adjust overhead coiling doors to operate easily, free from warp, twist or distortion and fitting weather-tight for entire perimeter.

END OF SECTION 08 33 23