SECTION 08 33 23 – overhear coiling doors

1. GENERAL
   1. SUMMARY
      * + 1. This Section includes requirements for supply and installation of the following types of electric motor operated overhead coiling doors:

Insulated Service Doors.

Non-Insulated Service Doors.

Fire Rated Service Doors: 1.5-hour (Class A) ULC labelled fire doors.

* + - * 1. Related Requirements:

Section 04 20 00 – Unit Masonry.

Section 05 50 00 – Metal Fabrications.

Section 09 90 00 – Painting.

* 1. SUBMITTALS
     + - 1. Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
         2. Action Submittals: Provide the following submittals before starting any work of this Section:
         3. Product Data: Submit product data for each type and size of overhead coiling door and accessories.

Shop Drawings:

Submit shop and erection drawings in accordance with Section 01 33 00 – Submittal Procedures.

Show and describe in detail special door assemblies, including elevations, sections and detail of doors, track, hardware, and operating components, and of relationship of door to adjacent construction including dimensions, gauges, thickness, description of materials, finishes, as well as all other pertinent data and information.

Samples for Initial Selection: Submit manufacturer's colour charts showing full range of colours available for units with factory applied finishes for initial selection.

Certificates: Submit certification for oversize door assemblies having fire ratings that exceed size limitations of labelled assemblies.

Maintenance Data and Operating Instructions: Upon completion of installation, supply copies of data all as per General Conditions.

* 1. QUALITY ASSURANCE
     + - 1. Regulatory Agencies: Provide laboratory tested products acceptable to the Authority Having Jurisdiction for the following criteria:

Fire and Smoke Rated: Provide fire rated doors and activation components meeting resistance ratings required for project; labelled and tested in accordance with NFPA 80 and ULC S104.

Electrical: Provide electrical components, devices and accessories, motors, controls and wiring conforming to CSA Standards and CSA labelled.

* + - * 1. Qualifications:

Work shall be executed by a firm having minimum five (5) years’ experience in successful manufacture and installation of work of type and quality shown and specified.

* + - * 1. Job Conditions:

Protect during installation any adjacent finished surfaces from contamination and damage due to work under this section.

* 1. SITE CONDITIONS
     + - 1. Site Measurements: Verify dimensions by site measurements before fabrication and indicate measurements on shop drawings where overhead coiling doors are required to fit within openings; coordinate fabrication schedule with construction progress to avoid delaying the Work.
         2. Established Dimensions: Establish dimensions and proceed with fabricating overhead coiling doors without site measurements where site measurements cannot be made without delaying the Work; coordinate construction to ensure that actual site dimensions correspond to established dimensions.
  2. WARRANTY
     + - 1. Warrant work of this section against defects in materials and workmanship in accordance with General Conditions but for three (3) years. Agree to make good promptly any defects which occur within this period.

1. PRODUCTS
   1. Materials
      * + 1. Basis of Design Materials and Manufacturers:

Exterior Insulated Overhead Coiling Doors:

Thermiser Insulated Rolling Service Door, Model ESD20 by Cookson Company.

Stormtite 626 Series Insulated Rolling Service Doors by Overhead Door Corporation.

ThermoTite Model 800C by Wayne Dalton Corporation.

Interior Overhead Coiling Doors:

Service Door, Model ESD10 by Cookson Company.

Model 610 Rolling Steel Service Doors by Overhead Door Corporation.

Rolling Service Door, Model 800 by Wayne Dalton Corporation.

1.5 hour(Class A) ULC Labelled Fire Doors:

Model ERD10, Rolling Fire Door by Cookson Company.

630 Series Fire-Rated Rolling Service Doors by Overhead Door Corporation.

FireStar Model 700 Series Fire Door by Wayne Dalton Corporation.

* 1. PERFORMANCE REQUIREMENTS
     + - 1. Operation Cycle Requirements:

Provide overhead coiling door components and operators capable of operating for not less than 20,000 cycles and for 10 cycles per day.

Provide fire rated overhead coiling door components and operators tested to operate for a minimum of 50,000 cycles and 500 closing trip tests.

* + - * 1. Fire Rating Performance: Labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4 S104 and CAN/ULC S105 for ratings specified or indicated and as follows:

Govern dropping speed to a maximum of 150 mm per second and provide mechanism to stop door when encountering an obstruction and will allow continued drop after obstruction is removed.

Fabricate and install overhead coiling doors in accordance with NFPA 80 to suit fire protection rating required.

* 1. COMPONENTS AND FABRICATION
     + - 1. Curtain:

Interlocking, galvanized steel slats of 20 GSG (.096mm) 2" wide, flat surface interlocking slats and free of sharp breaks or curves.

Exterior Door: Fill slat with manufacturer's standard rigid cellular polystyrene or polyurethane foam type thermal insulation; enclose insulation completely within metal slat faces.

Slats shall be of uniform width and easily replaced.

Bottom bar shall consist of 2 steel angles minimum 1/8" thick equal weights, installed one each side of bottom slat and securely fastened to slat.

The ends of each interlocking slat shall be fitted with malleable steel end locks to prevent lateral movement and act as wearing surface.

* + - * 1. Guides:

Guides shall be of standard rolled or fabricated steel angles and channels minimum 3/16" thick, to form slot of sufficient depth to retain curtain against reasonable impact. Flare upper ends of guides for curtain entry.

Guides shall be securely anchored to jambs, (welding will not be permitted). Bolts used for anchoring shall be provided with fibre washers.

* + - * 1. Counterbalance:

Curtain shall be coiled on a pipe of size sufficient to carry the door load with deflection not to exceed 0.03" per ft. of opening width and to evenly balanced by oil tempered helical counter-balancing steel springs of sufficient size to balance the width of curtain, including a minimum 25% overload factor.

Fit one end of barrel with governor sprocket and other end with large gear for hand chain hoist.

Springs shall all be anchored to the same tension rod and held in position by easily accessible adjusting mechanism.

Install ball bearings at rotating support points.

* + - * 1. Escapement Gears:

Fabricate escapement gears to disengage operating mechanism, allowing the door to close by fusible link and/or electromechanical release units. Escapement gears to be covered by minimum 24-gauge galvanized steel sheet cover.

* + - * 1. End Brackets:

Fabricate from heavy steel plate and bar designed to support ends of coils and various mechanisms in accordance with manufacturer's standards and design.

* + - * 1. Hoods:

Fabricate from galvanized steel sheet of not less than 24-gauge commercial galvanized steel and formed to fit contour of end brackets. Reinforce top and bottom edges with returned hem and intermediate supports to prevent sagging.

Provide continuous internal hinged flame baffle.

* + - * 1. Smoke Seals:

Provide continuous ULC approved smoke seals at door bottoms, jambs and heads.

* + - * 1. Operation:

Door will be operated by means of motor operation. Optional pneumatic sensing edge to be attached to bottom bar to stop and reverse the door when it contacts an object during the closing cycle.

* + - * 1. Electronic Door Operators:

Motorized Operator: 2 HP, 110 Volt Single Phase, with automatic reset current sensing overload protection of size and capacity recommended by manufacturer for specified door; factory pre-wired motor controls, starter, gear reduction unit, solenoid operated brake, clutch, control devices, integral gearing for locking door, and accessories required for proper operation, having the following characteristics:

Speed: Sized to open door from any position, at minimum 8"and maximum 12" per second.

Limit Switches: Adjustable switches, interlocked with motor controls set for automatic door stop at fully opened and fully closed positions.

Disconnect Device: Hand operated disconnect to automatically engage chain and sprocket operator to release brake for emergency manual operation and disconnect from motor, without affecting timing of limit switch; mounted in and accessible location; with interlock device to automatically prevent motor from operating when emergency operator is engaged.

Door Operator Type: Wall mounted, jackshaft, gear head type door operator unit consisting of electric motor, enclosed worm gear running in oil primary drive, and chain and sprocket secondary drive; with auxiliary chain hoist and floor level disconnect.

* + - * 1. Locking:

Electric-motor operation doors will lock through the operator gearing.

* + - * 1. Labels:

Rolling fire doors will bear the 1-1/2 (one and one-half) hour label. Rolling fire doors will be manufactured in strict accordance with the requirements of Underwriters Laboratories Canada -listed procedures and will bear the ULC label (tag).

* + - * 1. Smoke/Heat Detectors and Electromechanical Release Units:

Doors will be equipped with FireStar release mechanism, requiring only one cable to be routed to the operated side (cable not required to be routed to adjusting wheel side.) Doors will close by a thermally actuated link rated at 165 degrees F, or by an optional listed releasing device, or by manually operating the release handle. All spring tension shall be maintained when the release mechanism is activated. After closing by manual operation of release handle, the door shall be able to be reset by one person from one side of the door (re-engaging the release handle

* + - * 1. Finish:

Steel and Galvanized Steel Finishes: Manufacturer's standard powder coat finish consisting of primer and topcoat; colour selected from manufacturer's complete colour line.

* + - * 1. Accessories:

Weather Seals: Combination bottom weather seal and sensor edge for motor operated doors.

Provide all anchors, bolts, washers, shims, expansion shields and other miscellaneous items necessary to complete the work.

Vision Windows: 6 mm thick, clear polycarbonate meeting CGSB 12.12; set in manufacturer's standard vinyl, rubber, or neoprene glazing channel secured to curtain slats.

1. EXECUTION
   1. examination
      * + 1. Examine areas of work that affect the work of this section. Report in writing all errors, defects, and discrepancies immediately to the Consultant.
          2. Commencement of work implies acceptance of surfaces and conditions.
   2. INSTALLATION
      * + 1. Secure guides to frame as recommended by door manufacturer with maximum spacing of 3'-0" on centers.
          2. Doors shall fit snugly to all edges of jambs and heads of frames and shall operate smoothly and freely under all conditions of operation. Door shall sit in any position in door opening and shall not drift upward or downward. All necessary appurtenances relating to the door installation, required on the door frames shall be supplied and installed under this section.
          3. Install fire rated doors in accordance with NFPA 80.
   3. ADJUSTMENT AND CLEANING
      * + 1. Adjust work to ensure free running, tightly closing and properly counterbalanced operation. Ensure that installation is free from warp, twist, or other distortion. Lubricate operating hardware only as recommended by the manufacturer.
          2. Refinish damaged or defective work so that no variation in surface appearance is discernible. Refinish work at site only if approved by the Consultant.

END OF SECTION