SECTION 08 36 13.13 – metal sectional doors

1. General
   1. SUMMARY
      1. This Section includes requirements for supply and installation of the following:
         1. Motorized sectional overhead insulated metal doors, complete with associated hardware and track, to provide a complete system.
      2. Related Requirements:
         1. Section 04 20 00 – Unit Masonry.
         2. Section 05 50 00 – Metal Fabrications.
         3. Section 06 10 00 – Rough Carpentry.
         4. Section 09 29 00 - Gypsum Board.
         5. Section 09 90 00 – Painting.
         6. Section 11 13 00 – Loading Dock Equipment.
   2. SUBMITTALS
      1. Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
      2. Samples:
         1. Selection Samples: For each finish product specified, two (2) complete sets of colour chips representing manufacturer's full range of available colours and patterns.
         2. Verification Samples: For each finish product specified, two (2) samples, minimum size 150mm (6") square, representing actual product, colour, and patterns.
      3. Shop Drawings:
         1. Submit detailed shop drawing showing fabrication and installation requirements.
      4. Operating and Maintenance Data:
         1. Provide operating and maintenance data for incorporation into the Operating and Maintenance Manual.
   3. QUALITY ASSURANCE
      1. Design sectional overhead insulated metal doors to operate at 1 kPa wind pressure, without any detrimental effects.
   4. STORAGE, DELIVER, HANDLING AND PROTECTION
      1. Co-ordinate deliveries to comply with construction schedule and arrange ahead for off the ground, under cover storage location. Do not load any area beyond the design limits.
2. Products
   1. APPROVED PRODUCTS AND MANUFACTURERS
      1. This specification is based on Thermatite T175 Sectional Steel, Overhead Doors by Richards Wilcox Door Systems (Toronto) Limited. The following manufacturers shall also be accepted provided they conform in general with specified requirements:
         1. Steel-Craft Door Products Ltd.
         2. Upwardor Corporation.
   2. Steel section
      1. Door sections shall be constructed from Galvalume sheet steel, a corrosion-resistant embossed steel, coated with approximately 55% aluminum 1.6% silicone, with the balance being zinc.
      2. Door sections shall be manufactured by a continuous foamed-in-place polyurethane lamination process resulting in a homogenous sandwich of even-textured polyurethane insulation of metal/foam/metal construction to form a section 1-13/16" thick. Sections shall be roll-formed to produce a thermal break. Sections shall have a thermal resistance of minimum RSI of 2.15.
      3. Joints between sections shall be designed with pivotable round horizontal links to eliminate accumulated water from flowing down the inside of the door when opened.
      4. Sections shall be equipped with 1/16" thick steel end caps for bracket and end hinge attachment.
   3. WEATHER SEALS
      1. Thermal plastic rubber tube seal shall be fitted inside every joint between the sections to control air infiltration and exfiltration.
      2. Provide EPDM rubber head flexible seal fitted to an aluminum extruded strip to ensure proper seal against header door frame regardless of outside/inside temperature variances.
      3. Nylon jamb seal shall be provided on the vertical angle supporting the tracks to prevent contact between conductive metal surfaces, provide seal against wind, rain and heat loss and reduce friction.
      4. Provide EPDM rubber severe weather blade-type jamb seal. This seal shall attach to the nylon jamb seal retainer to form a weathertight seal against the outside skin of the door.
      5. Provide EPDM double-bottom sealing weatherstrip for manually operated doors. Door bottom weatherstripping shall conform to minor irregularities in the floor.
   4. vision panels
      1. Provide one 6" x 6" high double glazed vision panels to locations in sectional overhead doors as indicated on drawings and schedules.
      2. Double glazing shall consist of high strength, clear acrylic panels held in place by extruded EPDM rubber glazing gaskets.
   5. TRACKS
      1. Tracks shall be 3" heavy-duty gauge galvanized steel vertical lift track as indicated on drawings, designed for clearances shown. Provide complete track assembly including brackets, bracing and reinforcing for rigid support of the track for the required door type and size. Slope tracks at proper angle from vertical to ensure tight closure at jambs when the door is closed. Weld or bolt to track supports.
      2. Provide steel roll-formed track channel. Track channel shall be faced with polyvinyl chloride (PVC). Track channel shall allow temperature change movements of the door to take place when subjected to extreme temperature variance between inside and outside.
   6. REINFORCEMENTS AND SUPPORTS
      1. Provide galvanized steel track reinforcement and support members. Secure, reinforce and support tracks as required for size and weight of door to provide strength and rigidity and to ensure against sag, sway and detrimental vibration during opening and closing of doors.
      2. Support and attach tracks at opening jambs with continuous angle welded to tracks and attached to wall. Support horizontal tracks with continuous angle in accordance with manufacturer's specification for size and weight of door.
   7. COUNTERBALANCING SYSTEM
      1. Doors shall be equipped with helical wound torsion springs having a minimum spring life of 100,000 cycles.
      2. Spring material shall be made of high tensile wire.
      3. Doors shall be supplied with solid steel shaft keyed the entire shaft length, in accordance with manufacturer's written instructions.
   8. HARDWARE
      1. Provide heavy-duty fully adjustable roller brackets to each end reinforcement plate as per manufacturer's recommendations. The adjustable roller brackets are to provide an easy adjustment of the door to the jamb to achieve the proper seal. Use self-tapping fasteners to secure brackets to the door sections.
      2. Provide heavy-duty, rust-resistant hardware, with galvanized fasteners, to suit type of door.
      3. All bottom corner brackets shall be equipped with adjustable roller brackets. All brackets shall feature the locking wedge on the cable fastener for complete adjustments.
      4. Provide heavy-duty rollers, with 10 steel ball bearings in case-hardened steel races. Extend roller shaft through both brackets where double brackets are required. Provide roller tires to suit size of track.
   9. CABLE DRUM
      1. Provide cast aluminum cable drums grooved to receive the proper diameter cable for the weight of the door with two extra safety wraps and dual locking screws.
   10. OPERATION
       1. 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.
       2. Mechanical type, manually operated chain hoist which has a continuous, hot-dip galvanized heavy-duty, comfortable grip operating chain which operates through a sprocket and roller chain drive with chain guard and pull required to operate the hand chain shall not exceed (156N) 35 lbs. Handing of chain hoist operator shall be as selected later by Consultant.
   11. LOCKING
       1. Manual Operation: Shall be across the door bar latch (inside only) with "night" lock having provision for padlocks and interior handle. Padlocks shall be provided by the Owner.
       2. Motorized Operation: Electric-motor operation doors will lock through the operator gearing.
   12. ELECTRONIC DOOR OPERATORS
       1. Electric Motor Operation: Provide ULC listed electric operator, size and type as recommended by manufacturer to move door in either direction at not less than 2/3 foot or more than 1 foot per second.
          1. Entrapment Protection:
             1. Photoelectric sensors.
          2. Operator Controls:
             1. Both interior and exterior location.
             2. Vehicle detector operation - Interior Only.
             3. Card reader control - Exterior Only
       2. 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.
       3. Electro-mechanical reversing safety bar: Full width of bottom section.
   13. MISCELLANEOUS
       1. Provide all wood blocking, shims, bolts, washers, anchors, expansion shields, wiring, connectors, and all other miscellaneous items necessary to complete the Work of this Section.
       2. Provide lift handles.
   14. FINISHES
       1. All exposed steel surfaces shall be suitably cleaned and pre-treated. Apply one coat of manufacturer's standard shop primer. Ready for finish painting by Section 09 90 00 - Painting.
3. Execution
   1. examination
      1. Examine all 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 of this Section implies acceptance of surfaces and conditions.
   2. INSTALLATION
      1. Install doors, tracks and operating equipment complete with necessary hardware, jamb and head mould stops, anchors, brackets, and accessories. Install manually operated sectional overhead insulated metal doors where indicated on drawings.
      2. Mount counterbalance mechanism with manufacturer's fully adjustable ball bearing brackets at each end of shaft. Furnish torsion shaft centre support bearings as required for size and weight of doors.
      3. Fasten vertical track assembly to framing at maximum 24" O.C.
      4. Install weather seals at heads, jambs and door bottoms as recommended by door manufacturer to form a continuous weathertight seal at door perimeter.
      5. 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.
   3. ADJUSTMENT AND DEMONSTRATION
      1. Upon completion of Work of this Section, and when directed by the Consultant, adjust, and lubricate sectional overhead doors, check and adjust controls, ensure that all equipment and mechanisms are operating smoothly, and demonstrate the operation, control and safety features of each door to the Consultant and the Owner.
   4. CLEANING AND CLEAN-UP
      1. Clean and make good to the Consultant's approval, surfaces soiled or otherwise damaged in connection with the Work of this Section. Contractor shall pay the cost of replacing finishes or materials that cannot be satisfactorily cleaned.
      2. On completion of the Work of this Section, remove all debris, equipment and excess material from the site that results from the Work of this Section.

END OF SECTION