

Part 1 General

1.01 RELATED SECTIONS

- .1 Section 26 05 00 - Electrical General Requirements.

1.02 REFERENCES

- .1 American National Standards Institute (ANSI).
 - .1 ANSI DASMA 102-2012. Specifications For Sectional Doors.
- .2 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM A653/A653M-15e1. Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

1.03 SYSTEM DESCRIPTION

- .1 Door Assembly: metal/foam/metal sandwich panel construction.
- .2 Doors comply with: ANSI/DASMA 102.
- .3 Provide doors, tracks, hardware, operators, and accessories from one manufacturer.
- .4 Operation: industrial duty electrical jack shaft operator. Emergency release for manual operation. Wall mounted control panel and portable remote controllers.
- .5 Design Requirements.
 - .1 Wind load design: to ANSI/DASMA 102 standards and to meet local design loads as directed by National Building Code. Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with National Building Code with a maximum horizontal deflection of 1/240 of opening width.
 - .2 Design door assembly to withstand minimum 25000 cycles per annum.

1.04 SUBMITTALS

- .1 Provide Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit manufacturer's printed product literature, specifications and data sheets for doors, hardware and accessories. Include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Submit shop drawings. Indicate sizes, opening dimensions, and required clearances. Provide connection details at head and jamb. Indicate service rating, types, materials, operating mechanisms, hardware and accessories, required clearances and electrical connections.
 - .1 Provide details, detailed door assemblies and adjacent construction. Include elevations, sections and details of door, track, hardware and operating components, dimensions, gauges, finishes and relationship of door, track, hardware, and operating components to adjacent construction.
- .4 Samples: submit two complete sets of color chips representing manufacturer's full range of available colors and patterns. Submit two samples, minimum size 150 mm square for each actual product, color, and pattern.
- .5 Submit manufacturer's installation instructions.

1.05 CLOSEOUT SUBMITTALS

- .1 Provide operation and maintenance data for overhead door hardware for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.06 QUALITY ASSURANCE

- .1 Submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .2 Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
- .3 Installer: Authorized representative of the manufacturer with minimum five years documented experience.
- .4 Electrical components: listed and classified by ULC/CSA acceptable to authority having jurisdiction as suitable for purpose specified.
- .5 Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

1.07 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction / Demolition Waste Management.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Dispose of corrugated cardboard, polystyrene and plastic packaging material in appropriate on-site bin for recycling in accordance with site waste management program.
- .4 Divert unused metal and wiring materials from landfill to metal recycling facility approved by Consultant.

Part 2 Products

2.01 SHEET METAL MATERIALS

- .1 Sheet Steel: hot dip galvanized steel sheet to ASTM A653/A653M. Commercial quality, with G90 (Z275) coating designation.

2.02 DOORS

- .1 Insulated panel doors of interlocking prefinished galvanized sheet steel sections bonded to insulation core.
 - .1 Size: overall size as indicated in the Drawings. Size door 25 mm higher than finished door opening and 25 mm beyond jamb on either side of finished door opening.
 - .2 Section joints: 6.3 mm ship-lap.
 - .3 Section thickness: 45 mm.
 - .4 Exterior face: flush pattern with a non repeating random stucco surface texture.
 - .5 Exterior steel: factory prefinished, hot-dipped galvanized sheet steel. 0.94 mm thick.
 - .6 Interior face: rib pattern with a non repeating random stucco surface texture.
 - .7 Interior steel: factory prefinished, hot-dipped galvanized sheet steel 0.41 mm thick.
 - .8 End stiles: end caps: hot-dipped galvanized steel. 1.6 mm thick.
 - .9 Reinforcing: continuous internal steel reinforcing for hardware mounting.

- .10 Insulation: foamed in place CFC free and HCFC free polyurethane, fully encapsulated. Thermal Value: R 16.00.
- .11 Colours to be selected by Consultant from manufacturer's full and extended range of available colours. Different colours may be selected for the interior and exterior faces.
- .12 Acceptable Materials: Model T175-20 by The Door Company.

2.03 HEAVY DUTY INDUSTRIAL HARDWARE

- .1 Hinges: industrial duty: linear style 3 mm thick zinc coated steel.
- .2 Track: low headroom (rear torsion spring) track system. Rolled formed from 75 mm, 2.7 mm galvanized steel. Provide offset to accommodate specified door style.
 - .1 Bracket mount: bolted type field adjustable to ensure weather tight seal, rib reinforced, stamped from 3.1 mm thick commercially galvanized steel.
 - .2 Track hangers: perforated type 32 mm by 32 mm angles, roll formed from 2.0 mm thick commercially galvanized steel.
 - .3 Horizontal track curve: 406 mm radius or as required to accommodate low headroom track system.
- .3 Spring counter balance: rear mounted torsion spring assembly. Heavy duty oil tempered torsion spring with manufacturers standard galvanized steel brackets. Provide centre carrier brackets as required. Sized to suit a minimum of 25000 cycles. Shaft: 25 mm solid CRS shaft with full length keyway rated for doors up to 450 kg.
- .4 Wire Rope: Aircraft type 7x19 construction with a safety factor of 5:1 minimum.
- .5 Rollers: hardened steel outer race, 73 mm diameter, with ten 8 mm ball bearings and 11 mm diameter roller axels.
- .6 Roller Brackets: fabricated from commercially galvanized steel. Graduated type design to suit the slope in the vertical track to ensure weather tight seal. Thickness 3.1 mm.
- .7 Lock: interior mounted slide lock. Flat bar door latch with night latch and electric interlock switch.
- .8 Weatherstripping:
 - .1 Seals: standard continuous, replaceable dual seals between sections.
 - .2 Bottom seal: 76 mm vinyl retained in aluminum extrusion.
 - .3 Top seal: PVC/Vinyl type.
 - .4 Jamb seal: dual fin vinyl retained in aluminum extrusion.

2.04 ACCESSORIES

- .1 Track guards: formed from 5.0 mm thick, hot dip galvanized steel. 1500 mm high.
- .2 Pusher springs. manufacturers standard.
- .3 Cable failure device: designed to stop the door from free fall in case of cable failure. Designed to receive interlock switch to cut power to the electric operator.
- .4 Spring failure device: designed to stop the door shaft, and the free fall of the door in case of spring failure. Designed to receive interlock switch to cut power to the electric operator.

2.05 ELECTRICAL OPERATOR

- .1 Electrical jack shaft, direct drive, side mounted operator. UL Listed. Equipped with a built-in chain hoist assembly and a floor level quick release mechanism to allow for manual operation of the door in the event of a power failure.

- .2 Chain hoist: chain and sprocket type design, 3:1 reduction.
- .3 Speed: between 2/3 foot and 1 foot per second.
- .4 Equip Operator with electrical interlock switch to disconnect power to operator when in manual operation.
- .5 Mounting brackets: galvanized steel, size and gauge to suit conditions.
- .6 Integral motor reversing starter, solenoid operated brake heater elements for overload protection, including control relays as applicable.
- .7 NEMA 4 rated gear reducer and motor.
- .8 Electrical motors, controller units, remote pushbutton stations, relays and other electrical components: to CSA approval. Provide CSA rated enclosures.
- .9 Power supply: 120 V, single phase, 60 Hz. Control: provide transformer for 24 VAC control voltage.
- .10 Provide with 1800 mm long power plug.
- .11 Motor: sized to accommodate door size. Minimum ½ HP.
- .12 Pre wired digital limits.
- .13 Safety switch: electro mechanical safety bar. Full width of bottom section of door, to reverse door to open position when coming in contact with object on closing cycle.
- .14 Photoelectric sensor; detect obstruction and reverse door without requiring door to contact obstruction.
- .15 Acceptable Materials: Direct Drive TDC operator Mode TDC-V-SE by The Door Company.
- .16 Control Station:
 - .1 Interior. Surface mounted, in location as directed by Consultant. With "OPEN-CLOSE-STOP" designations on pushbuttons in English. Acceptable Material: Model TDC-V-SE control panel by The Door Company.
 - .2 Control Panel: Exterior. Key operated, surface mounted, in location as directed by Consultant. With "OPEN-CLOSE-STOP" designations on pushbuttons in English.
 - .3 Remote controllers: commercial duty, remote control.

2.06 FABRICATION

- .1 Fabricate the doors to dimensions detailed on reviewed shop drawings, free from distortion and defects detrimental to the appearance and performance.
- .2 Confirm all site dimensions prior to the fabrication of the doors and other components.
- .3 Accurately fit joints and intersecting members with adequate fastenings.

Part 3 Execution

3.01 MANUFACTURER'S INSTRUCTIONS

- .1 Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Install doors and hardware in accordance with manufacturer's instructions.

3.02 VERIFICATION

- .1 Do not begin installation until openings have been properly prepared.
- .2 Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.
- .3 Verify electric power is available and of correct characteristics.
- .4 Notify Consultant of unsatisfactory preparation before proceeding.

3.03 INSTALLATION

- .1 Install doors, tracks and operating equipment complete with necessary hardware, weatherstripping, anchors, hangers, brackets and accessories.
- .2 Rigidly support rail and operator and secure to supporting structure without distortion or stress.
- .3 Securely brace door tracks suspended from structure. Secure tracks to structural members only.
- .4 Fit and align door assembly including hardware, level and plumb, to provide smooth operation. Assemble and erect work plumb, true, square, straight and level.
- .5 Position head and jamb weatherstripping to contact door sections when closed; secure in position. Adjust weatherstripping to form a weather tight seal.
- .6 Install operator including electrical motors, controller units, pushbutton stations, relays and other electrical equipment required for door operation.
- .7 Make wiring connections between power supply and operator and between operator and controls.
- .8 Touch-up doors where factory finish is damaged during installation.

3.04 ADJUSTMENT AND DEMONSTRATION

- .1 Lubricate and adjust door operating components to ensure smooth opening and closing of doors. Adjust to operate smoothly throughout full operating range. Grease sprockets, bearings, cables, link chains and guides. Use lubricant as recommended by the manufacturer
- .2 Demonstration: test operate and adjust doors to perform smoothly, free from warp, twist or distortion. Demonstrate the operation to the satisfaction of the Consultant.

3.05 CLEANING

- .1 Leave Work area clean at end of each day.
- .2 Upon completion remove surplus materials, rubbish, tools and equipment. Clean doors and frames with approved non-abrasive cleaner.
- .3 Perform cleaning after installation to remove construction and accumulated environmental dirt.

3.06 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by sectional metal door installation.

END OF SECTION