

**Part 1      General**

**1.1          REFERENCES**

- .1 Canadian Standards Association (CSA)
  - .1 CSA B44-07, Safety Code for Elevators and Escalators.
  - .2 CAN/CSA B355-00 (R2005), Lifts for Persons With Physical Disabilities.
  - .3 CSA C22.1-09, Canadian Electrical Code, Part 1 (21st edition), Safety Standard for Electrical Installations.

**1.2          SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheets. Include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop drawings: Submit drawings stamped and signed by professional engineer registered or licensed in Manitoba.
  - .1 Include on layout drawings:
    - .1 Pumping unit controller, piping, and other components.
    - .2 Size and location of lift, guide rails, buffers and other components in hoistway.
    - .3 Rail bracket spacing and maximum loads on guide rails.
    - .4 Reactions at points of support.
    - .5 Weights of principal components.
    - .6 Top and bottom clearance and over travel of lift.
    - .7 Location of circuit breaker, or disconnect switch, light switch and feeder extension points.
    - .8 Rating of drive motor and fused disconnect.
    - .9 Outside diameter and wall thickness of cylinder, plunger and piping, and working pressure.
    - .10 Length of plunger and cylinder.
  - .2 Include on general arrangement drawings:
    - .1 Type, size, location of hoistway entrances showing details of fastening to hoistway structure.
    - .2 Platform design showing details of construction and equipment devices.
- .4 Quality Control Submittals:
  - .1 Manufacturer's installation instructions.
- .5 Closeout Submittals:

- .1 Provide maintenance data for incorporation into maintenance manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Record actual locations of equipment, names of equipment manufacturers and suppliers, concealed conduit and boxes, concealed devices, disconnects.
- .3 Include description of lift operation and control including motor and pump unit, door operation, signals, emergency power operation, and special or non-standard features provided.
- .4 Provide parts catalogues with complete list of equipment replacement parts with equipment description and identifying numbers.
- .5 Legible schematic of hydraulic piping and wiring diagrams covering electrical equipment installed, including changes made in final work, with symbols listed corresponding to identity or markings on both machine room and hoistway apparatus.
- .6 Lubrication chart.
- .7 Planned maintenance tasks and their frequencies.

#### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal: Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal

### **Part 2 Products**

#### **2.1 LIFT CHARACTERISTICS**

- .1 Hydraulic vertical platform lift: Hydraulic tower with lifting platform, in compliance with CSA B355.
- .2 Rated Net Capacity: 340 kg.
- .3 Rated Speed: 0.1 m/sec.
- .4 Levels served: 3.
- .5 Car configuration: Front/rear exit.
  - .1 Side Guards of platform: Steel frame with powder coat finish and steel panel inserts to minimum 1067 mm height.
- .6 Pit depth: 76 mm.
- .7 Power supply: 110 VAC, 20 amp, single phase, 60 Hz.
- .8 Emergency power: 24V battery raising and lowering.
- .9 Drive system: 2:1 roller chain, hydraulic.

- .10 Motor/pump: 1 HP, gear type.
- .11 Operation: Constant pressure.
- .12 Controller: Relay logic based controller.
- .13 Platform: 1067 mm wide x 1524 mm front to back.
- .14 Powder coat finishes: Colour as selected by Departmental Representative from manufacturer's standard range.
- .15 Lift Enclosure:
  - .1 Steel framing with tempered glass inserts.
- .16 Doors: Steel frame, concealed hinges and concealed electro/mechanical interlock, flush closing operation with hoistway side.
  - .1 Provide tempered glass inserts for doors.
  - .2 Operation: Automatic, surface mounted 24V door opener with battery back-up.
  - .3 Door width: 1067 mm clear opening.
- .17 Call Stations: Doorframe-mounted landing call stations, keyless operation.
- .18 Car Operation:
  - .1 Panel: Constant pressure buttons, emergency stop/alarm button, and emergency LED light mounted on removable stainless steel panel, #4 finish.
  - .2 Auxiliary lighting: Battery operated LED light fixture with automatic recharging system.
- .19 Pumping Unit and Control: Enclosed in tower, pre-wired and tested prior to shipment.
  - .1 Relay logic based operation.
  - .2 Adjustable pressure relief valve.
  - .3 Manually operable down valve to lower lift in the event of an emergency; activated from outside of the hoistway through keyed box.
  - .4 Pressure gauge isolating valve, manually operable.
  - .5 Gate valve to isolate cylinder from pump unit.
  - .6 Electrical solenoid for down direction control.
  - .7 Emergency Operation - Manual lowering device located outside hoistway in lockable box positioned at lower landing.
- .20 Cylinder and Plunger:
  - .1 Cylinder: Steel pipe of sufficient thickness and suitable safety margin. Top of cylinder equipped with cylinder head with internal guide ring and self-adjusting packing.

- .2 Plunger: constructed of steel shaft machined true and smooth, provided with stop electrically welded to bottom to prevent plunger from leaving cylinder.
- .21 Roller Chains: Two No. 50 roller chains with 16 mm pitch. Minimum breaking strength 2773 kg each.
- .22 Levelling Device: Anti-creep device to maintain carriage level within 12 mm of each landing.
  - .1 Locate limit switch and levelling device switches to be inaccessible to unauthorized persons, behind mast wall; make accessible through removable panels.
- .23 Guide Yoke: 2:1 guide yoke/sprocket assembly, complete with idler sheaves, roller guide shoes, bearings and guards.
- .24 Terminal Stopping Devices: Normal terminal stopping devices at top and bottom of runway to stop the car positively and automatically.
- .25 Guide Rails and Brackets: Steel 'C' guide rails and brackets to guide platform and sling. Guide rails to form part of structural integrity of unit and be integral to mast enclosure, ensuring stability and minimum platform deflection when loaded.
- .26 Car Sling: Steel tubing 1116 mm high with adequate bracing to support platform and car enclosure. Roller guide shoes mounted on top and bottom of car sling to engage guide rails.
  - .1 Guide shoes: Roller type with 76 mm diameter wheels.
- .27 Wiring and electrical connections: Comply with CSA C22.1. Use insulated wiring with flame-retardant and moisture-proof outer covering, run in conduit or electrical wireways. Use quick disconnect harnesses when possible.
  - .1 Travelling cables: Flexible, suitably suspended to relieve strain.

### **Part 3 Execution**

#### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

#### **3.2 INSPECTION**

- .1 Verify that hoistway and pit are ready for equipment installation.
- .2 Site dimensions shall be taken to verify that tolerances and clearances have been maintained and meet local regulations.
- .3 Confirm electrical power availability and characteristics.

- .4 Report unsatisfactory conditions to Departmental Representative.
- .5 Do not begin work until unsatisfactory conditions are corrected.

### **3.3 PREPARATION**

- .1 Clean surfaces thoroughly prior to installation.
- .2 Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### **3.4 LIFT INSTALLATION**

- .1 Install in accordance with manufacturer's written instructions.
- .2 Install components of elevator system as required by jurisdictional authorities to license the elevator.
- .3 Instruct users in operation procedures and Departmental Representative-designated personnel in trouble-shooting and maintenance procedures.

### **3.5 ADJUSTMENTS**

- .1 Adjust lift for smooth movement with neither perceptible lateral nor oscillating movement or vibration.
- .2 Adjust floor-levelling feature for each floor.
- .3 Adjust equipment to achieve smooth acceleration and deceleration of lift without perceptible steps, so as not to cause passenger discomfort.
- .4 Ensure guide rails are plumb, and parallel to each other.

### **3.6 FIELD QUALITY CONTROL**

- .1 Perform and meet inspection tests in accordance with CAN/CSA B355 and as required by jurisdictional authorities.
- .2 Supply instruments and execute tests.
- .3 Furnish test and approval certificates issued by jurisdictional authorities.
- .4 Test stop ring and hydraulic system by operating lift with rated load in up direction against stop ring at rated load.
- .5 Provide two weeks' written notice to Departmental Representative of date and time of tests.

### **3.7 PROTECTION**

- .1 Protect installed products until completion of project.

- .2 Touch-up, repair, and replace damaged products before final inspection.

**END OF SECTION**