

PART 1 - GENERAL

1.1 REFERENCES

- .1 American National Standards Institute (ANSI)/National Electrical Manufacturers Association (NEMA)
  - .1 ANSI/NEMA MG 1-2011, Motors and Generators.
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations.
- .3 CSA International
  - .1 ASME A17.1-2013/CSA B44-13, Safety Code for Elevators and Escalators (Bi-national Standard, with ASME A17.1.
  - .2 CSA B651-12(R2017), Accessible Design for the Built Environment.
- .4 Efficiency Valuation Organization (EVO)
  - .1 International Performance Measurement and Verification Protocol (IPMVP).
    - .1 IPMVP 2007 Version.
- .5 South Coast Air Quality Management District (SCAQMD), California State.
  - .1 SCAQMD Rule 1113-04, Architectural Coatings.
  - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-installation Meetings:
    - .1 Convene pre-installation meeting 1 week prior to beginning on-site installation, with Contractor's Representative and Departmental Representative in accordance with Section 01 31 19 - Project Meetings to:
      - .1 Verify project requirements.
      - .2 Review installation and substrate conditions.
      - .3 Co-ordinate with other building construction subtrades.
-

- 1.2 ADMINISTRATIVE .1 (Cont'd)  
REQUIREMENTS .1 (Cont'd)  
(Cont'd) .4 Review manufacturer's written  
installation instructions and warranty  
requirements.
- 1.3 ACTION AND .1 Submit in accordance with Section 01 33 00 -  
INFORMATIONAL Submittal Procedures.  
SUBMITTALS .2 Product Data:  
.1 Submit manufacturer's instructions,  
printed product literature and data sheets for  
passenger elevator and include product  
characteristics, performance criteria,  
physical size, finish and limitations.
- .3 Shop Drawings:  
.1 Indicate on drawings project layout,  
including details and information as follows::  
.1 Size and location of machine and  
controller.  
.2 Size and location of car, guide  
rails, buffers stands 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 car.  
.7 Wiring diagrams with location of  
circuit breaker, switchboard panel or  
disconnect switch, light switch and  
feeder extension points at machine.  
.8 Location in hoistway for connection  
of travelling cables for car light and  
telephone.  
.9 Location and size of access doors.  
.10 Loads on hoisting beam.  
.11 Seismic design data and detailed  
calculations.  
.12 Include on general arrangement  
drawings:  
.1 Type, size, location of  
hoistway entrances showing details  
of fastening to hoistway structure.
-





- 1.6 DELIVERY,  
STORAGE AND  
HANDLING  
(Cont'd) .5 Packaging Waste Management: (Cont'd)  
in Construction Waste Management Plan in  
accordance with Section 01 74 21 -  
Construction/Demolition Waste Management and  
Disposal and Section 01 35 21 - LEED  
Requirements.
- 1.7 WARRANTY .1 For Work of this Section 14 20 06 - Passenger  
Elevators 12 months warranty period prescribed  
in General Conditions is extended to 60  
months.  
.1 Extended warranty period must include  
warranty against:  
.1 Blistering, spalling or peeling of  
paint due to improper surface preparation  
or material application.  
.2 Opening of joints due to improper  
design or use of ineffective fastening  
devices.  
.3 Separation, cracking or splitting  
of plastic laminate due to improper  
application to core material, or to  
method of fabrication which gives rise to  
areas of high stress concentration or  
which restricts normal expansion or  
contraction of plastic laminate.
- .2 Manufacturers Warranty: submit, for  
Departmental Representative's acceptance,  
manufacturer's standard warranty document  
executed by authorized company official.

PART 2 - PRODUCTS

- 2.1 SYSTEM  
DESCRIPTION .1 Hydraulic passenger elevator, machine room  
less type.  
.1 Accessible Design in accordance with CSA  
B651.  
.2 Bilingual Markings: include  
identification and instructions on operating  
panels and on signal equipment in English and  
French.

- 
- 2.1 SYSTEM DESCRIPTION (Cont'd)
- .2 Design and construct elevator in accordance with ASME A17.1/CSA B44, local codes and regulations.
- 2.2 PERFORMANCE REQUIREMENTS
- .1 Select and install hydraulic passenger elevator components to form complete, operating elevator system meeting the following performance characteristics:
- .1 Service: general purpose.
  - .2 Application: holeless dual piston.
  - .3 Operation: microprocessor single car.
  - .4 Quantity: 1.
  - .5 Rated net capacity: 952 kg.
  - .6 Rated speed: 0.4 m/sec.
  - .7 Travel distance (nominal): 3.6 m.
  - .8 No. of stops: 2.
  - .9 No. of openings: 1 front.
  - .10 Inside car dimensions: 1727 mm wide x 1295 front to back.
  - .11 Entrance frame opening size: 914 mm x 2134 mm with 1 1/2 hours fire resistance rating. Stainless steel No.4 finish.
  - .12 Door type: single, stainless steel No. 4 finish.
  - .13 Door operation: side opening in single speed.
- .2 Hall Call Stations, both floors:
- .1 Vandal resistant lighted buttons indicating up and down.
  - .2 Jam mounted lighted travel direction indicator.
  - .3 Car location lighted indicator.
  - .4 Include smooth acceleration and deceleration of car without perceptible steps so adjusted as not to cause passenger discomfort.
  - .5 Elevator to travel between floors in not more than 10 seconds.
    - .1 Measure time from instant doors start to close until car has stopped level with next floor.
  - .6 Permit doors to start opening in advance of stop at floor level such that doors are at least 3/4 open when car is stopped level with floor.
-

2.2 PERFORMANCE  
REQUIREMENTS  
(Cont'd)

- .3 Power Unit (Oil Pumping and Control Mechanism): A self-contained unit located in the elevator pit consisting of the following items:
  - .1 NEMA 4/Sealed Oil reservoir with tank cover including vapor removing tank breather.
  - .2 An oil hydraulic pump.
  - .3 An electric motor.
  - .4 Electronic oil control valve with the following components built into single housing; high pressure relief valve, check valve, automatic unloading up start valve, lowering and levelling valve, and electro-magnetic controlling solenoids.
- .4 Pump: positive displacement type pump specifically manufactured for oil-hydraulic elevator service.
- .5 Motor: standard manufacturer motor specifically designed for oil-hydraulic elevator service. Duty rating - motors shall be capable of 80 starts per hour with a 30% motor run time during each start.
- .6 Controller to be located in hoistway entrance jamb. Maintain shaft fire rating.
- .7 Automatic Self Levelling Feature: install self-levelling feature which will automatically bring car to floor landings. Correct for over-travel, independent of operating device.
- .8 Home Landing: arrange Level 1 landing as home station by key operation.
- .9 Light Intensity: 215 lx maximum measured 0.75 m above floor. Totally enclose and conceal wiring and ballasts from view within car and finish ceiling cavity white.
- .10 Ventilation: ventilate by 2 speed manufacturer's standard exhaust air handling unit through roof and through concealed perforations at base.
  - .1 Limit total fan noise to 55dB on "A" scale of General Radio Sound Level meter type 1551A from reading 0.9 m above floor with fan on high speed.

2.2 PERFORMANCE  
REQUIREMENTS  
(Cont'd)

- .11 Tolerances: car movement on guide rails:  
smooth movement, with no perceptible lateral  
or oscillating movement or vibration.
- .12 Seismic Design Criteria: design and assemble  
elevator equipment and components to withstand  
earthquake forces in accordance with values  
indicated in structural drawings.
  - .1 Include adjustable seismic trigger  
switches to operate elevators whenever  
predetermined level of seismic acceleration is  
detected:
    - .1 Prevent idle elevator from  
starting.
    - .2 Stop elevator at next available  
stop.

2.3 MATERIALS

- .1 Materials: as required to achieve specified  
performance criteria; functionally compatible  
with adjacent materials and components.

2.4 CAR CAB

- .1 Enclose car sides except entrances suitable  
for removing or resurfacing for maintenance  
purposes.
- .2 Panels: removable, retained securely with  
hidden fastenings. Design for removal of  
panels from inside car.
  - .1 Face panels with materials of flame  
spread rating of 25 or less and trim edges.
- .3 Floor and ceiling: 1 mm, fire retardant  
treated surfaces and edges.
  - .1 Attach with flush mechanical fasteners.  
Double thickness floor sheathing.
- .4 Floor to accept resilient flooring specified  
in Section 09 65 16, flush with sill and  
securely fastened at front edge.
- .5 Walls: finish raised plastic laminate panels  
on particleboard with black vinyl reveals.
  - .1 Conform to the requirements of SCAQMD  
Rules 1113 and 1168.

2.4 CAR CAB  
(Cont'd)

- .6 Ceiling: raised ceiling to 2438 mm high at rear of overhead cross beam.
  - .1 Finish: exposed frame with white aluminum.
- .7 Loudspeaker and protective grille: in car top with shielded wiring connected to controller.
- .8 Operating panel and face plate: illuminated call buttons.
  - .1 Keys operation of car required.
  - .2 Key to tie into building master keying system.
- .9 Indicator panel: above door with illuminated position indicators.
- .10 Bumper rail: round stainless steel with No. 4 (satin) finish.
- .11 Pad hooks: mounted at 2134 mm height.
- .12 Wall mats: one set canvas covered, padded mats with fill material and sewn.
- .13 Furnish license holders in elevator car to suit certificate issued by enforcing authority.
  - .1 Design holder with hidden or tamper proof fastening.
- .14 Telephone cabinet in car with telephone symbol 75 mm in height and wording in both English and French "In case of emergency, lift receiver, wait for answer" / "En cas d'urgence, décrochez le récepteur et attendez qu'on vous réponde" engraved in Helvetica medium letters at least 6 mm high on orange phosphorescent paint.
  - .1 Identify elevator and name of building on back of cabinet cover. Include telephone wiring within elevator hoistway.
- .15 Car doors and frames: doors of sandwich panel construction. Frames of rolled sections, rigid construction. Stainless steel, No. 4 satin finish, minimum 1.3 mm thickness, 1 1/2 hour fire rating.

- 
- 2.4 CAR CAB (Cont'd)
- .16 Clear height under fixed car ceiling: 2740 mm.
  - .17 Clear car entrance height: 2134 mm.
- 2.5 POWER SUPPLY
- .1 Equipment Power: 600 V, 3 phase, 60 Hz, alternating current.
  - .2 Lighting: 120 V, single phase, 60 Hz, alternating current.
  - .3 Protect elevator equipment against damage or malfunction due to change to or from normal power supply and emergency power supply.

PART 3 - EXECUTION

- 3.1 EXAMINATION
- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections are acceptable for elevator installation in accordance with manufacturer's written instructions.
    - .1 Visually inspect substrates in presence of Departmental Representative.
    - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
    - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.
- 3.2 MANUFACTURER'S INSTRUCTIONS
- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, reviewed shop drawings, product catalog installation instructions and data sheets.
-

- 3.3 INSTALLATION .1 Install hoistway, and other elevator materials and components in accordance with ASME A17.1/CSA B44, local codes, regulations and manufacturer's written instructions.
- 3.4 FIELD QUALITY CONTROL .1 Manufacturer's Field Services:  
.1 Have manufacturer of products supplied under this Section, review Work involved in the handling, installation/application, protection and cleaning of its products and submit written reports, in acceptable format, to verify compliance of Work with Contract.  
.2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.  
.3 Schedule site visits, to review Work, at stages listed:  
.1 After delivery and storage of products and when preparatory Work or other Work on which the Work of this Section depends, is complete but before installation begins.  
.2 Twice during progress of Work at 25% and 60% completion.  
.3 Upon completion of the Work, after cleaning is carried out.  
.4 Obtain reports, within 3 days of review, and submit, immediately, to Departmental Representative.  
.5 If manufacturer installs elevator equipment delete the requirements of this article.
- 3.5 SITE TESTS .1 Perform tests and meet the requirements ASME A17.1/CSA B44.  
.2 Supply instruments and execute specific tests.  
.3 Furnish test and approval certificates issued by jurisdictional authorities.  
.4 At agreed time during twelve month warranty period, and with building normally occupied
-

- 3.5 SITE TESTS .4 (Cont'd)  
(Cont'd)  
using normal building traffic, conduct tests to verify performance. Furnish event recording of hall call registrations, time initiated, and response time throughout entire normal working day.
- 3.6 CLEANING .1 Remove protective coverings from finished surfaces and components.  
.2 Clean surfaces and components ready for inspection.
- 3.7 ADJUSTING .1 Adjust door opening and closing times to suit accessibility needs in accordance with Departmental Representative instructions and authorities having jurisdiction.  
.2 Adjust control system to cause elevators to answer hall calls during working day within performance criteria specified.  
.3 Adjust for smooth acceleration and deceleration of car so as not to cause passenger discomfort.  
.4 Adjust automatic floor levelling feature at each floor.
- 3.8 CLEANING .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.  
.1 Leave Work area clean at end of each day.  
.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.  
.1 Remove protective coverings from finished surfaces and components.  
.2 Clean surfaces and components and make ready for inspection.
-

3.8 CLEANING  
(Cont'd)

- .3 Waste Management: separate waste materials for reuse and in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.9 PROTECTION

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

3.10 MAINTENANCE

- .1 Furnish complete service and maintenance of elevator system components during elevator contract warranty period.
- .2 Systematically; monthly examine, clean, adjust, and lubricate equipment as per planned maintenance tasks and frequencies.
- .3 Maintenance to include systematic examination, adjustment and lubrication of elevator equipment; repair or replace parts whenever required.
  - .1 Use genuine parts produced by the manufacturer of specific equipment.
- .4 Perform work without removing car during peak traffic periods.
- .5 Provide emergency call back service during working hours for this maintenance period.
- .6 Maintain locally, near place of work, an adequate stock of parts for replacement or emergency purposes and have qualified installation personnel available to ensure fulfillment of this maintenance service without unreasonable loss of time.
- .7 Perform maintenance work using competent personnel, under supervision and in direct employ of elevator manufacturer.

3.10 MAINTENANCE  
(Cont'd)

- .8 Do not assign or transfer maintenance service to any agent or subcontractor without prior written consent of Departmental Representative.
- .9 Provide and maintain a maintenance log book to record all service carried out on elevator equipment. Keep log book current.