

## **CONVEYING**

This section of the Washington University School of Medicine (WUSM) Design Standards addresses the following requirements for Conveying and its application in WUSM projects:

### **ELEVATORS**

Standards References:

### **FINISHES**

## ELEVATORS

### DESIGN GUIDELINES

1. All elevators shall be non-proprietary, ADA compliant, and have a one year maintenance warranty after testing and final acceptance.
2. All elevator equipment shall be non-proprietary.

### EQUIPMENT AND PRODUCT REQUIREMENTS

1. 4500 pound capacity passenger elevator cabs:
  - a. Enclosure shall be 14-gauge metal and have a 8-foot canopy height.
  - b. Side and rear walls shall be plastic laminate panels with 1/2-inch reveals between panels and 1/8-inch thick be 6-inch high #4 satin stainless steel base below panels.
  - c. Front return(s), entrance columns and headers shall be #4 satin stainless steel and integral with return.
  - d. Ceiling and lighting shall be acrylic diffusers suspended in an aluminum frame with LED lighting above.
  - e. Car door shall be #4 satin stainless steel.
  - f. Car sill shall be extruded nickel silver.
  - g. Ventilation shall be by means of slots in the base below panels on the side and rear walls.
  - h. Handrails shall be 1/2-inch thick by 2-inch high stainless steel bars with ends returned and a minimum of four supports on each rail on the side and rear walls.
  - i. Lower protective rail shall be 1/2-inch thick by 6-inch high stainless steel bars with ends returned and a minimum of four supports on each rail on the side and rear walls. Profile and support of the lower rails shall match the upper handrails. Top of lower rail shall be 10-inches above floor.
  - j. Floor shall be Porcelain Tile, Carpet Tile, or Modular Walk-off Carpet to match adjacent Elevator Lobby. See [FINISHES](#).
2. 5000 pound service elevator car enclosure:
  - a. Enclosure shall be 14 gauge rigidized stainless steel side and rear walls with an 8-foot high 12 gauge furniture steel canopy painted white.
  - b. Front return(s), entrance columns, and headers shall be 14 gauge rigidized stainless steel and integral with return.
  - c. Ceiling and lighting shall be a minimum of two LED light fixtures flush mounted with canopy. Light fixture shall be hinged and opened from inside the elevator and secured in the closed position with vandal resistant fastening device.
  - d. Car door shall be rigidized stainless steel.
  - e. Car sill shall be extruded nickel silver.

- f. Handrails shall be 1/2-inch thick by 6-inch high stainless steel bars with ends returned and a minimum of four supports on each rail on the side and rear walls.
    - g. Lower protective rail shall be 1/2-inch thick by 6-inch high stainless steel bars with ends returned and a minimum of four supports on each rail on the side and rear walls. Profile and support of the lower rails shall match the upper handrails. Top of lower rail shall be 10-inches above floor.
    - h. Floor shall be Rubber Flooring (raised pattern) Aluminum or Checkerplate. See [FINISHES](#).
  3. 10000 pound freight elevator car enclosure (Class C1 Loading):
    - a. Enclosure shall be 12 gauge metal with a factory painted enamel finish and an 8-foot canopy height.
    - b. Car Gates shall be painted mesh.
    - c. Ceiling and lighting shall be a minimum of two LED light fixtures flush mounted with canopy. Light fixture shall be hinged and opened from inside the elevator and secured in the closed position with vandal resistant fastening device.
    - d. Protective rails shall be 10-inch and 12-inch steel channels on the side and rear walls at a height to be determined.
    - e. Lower protective rail shall be 1/2-inch thick by 6-inch high stainless steel bars with ends returned and a minimum of four supports on each rail on the side and rear walls. Profile and support of the lower rails shall match the upper handrails. Top of lower rail shall be 10-inches above floor.
    - f. Floor shall be 5/16-inch steel plate.
  4. Passenger style entrances for 4500 pound and 5000 pound elevators.
    - a. Frame shall be 16-gauge #4 stainless steel.
    - b. Door panels shall be 16-gauge cold rolled steel with 14 gauge #4 stainless steel.
    - c. Sill shall be extruded nickel silver.
  5. Freight style entrances for 10000 pound elevators.
    - a. Frame shall be steel channel (by others) to contain block hoistway wall.
    - b. Door panels shall be 12 gauge steel panels with wood core construction. .
    - c. Sill shall be trucking bar to sustain the capacity.
  6. Elevators shall have non-proprietary equipment as follows:
    - a. Signal fixtures shall be EPCO, Model Survivor Plus.
    - b. Fire service Phase I and Phase II Key Switches shall be Adams, FEKO1 key.
    - c. Voice annunciation shall be provided on public elevators.
    - d. Car operating panel(s). Provide auxiliary panel on elevators with two returns or front and reverse openings. Engrave elevator number, elevator capacity, telephone instructions, and fire service instructions. Allow provisions for card readers on one car operating panel in each elevator at ADA height.

- e. Telephone shall be hands free style incorporated in one car operating panel in each elevator and in each machine room by Rath Microtec, Model SmartRescue System.
  - f. Hall stations shall be flush mounted with #4 stainless steel faceplate, engraved with “do not use stairs language and graphics” per Appendix O of the elevator code.
  - g. Hall lanterns shall have an electronic chime at all floors.
  - h. Hall position indicator shall be digital display combined with hall lantern at main floor(s) only.
  - i. Car position indicator shall be a digital display in each header above car door.
  - j. Fire control panel conduit from hoistways to panel shall be by electrical contractor and wiring shall be by elevator contractor.
  - k. Voice alarm speaker shall be provided by others and installed by elevator contractor in each cab.
  - l. Fireman’s telephone jack shall be at each elevator and on fire control panel.
7. Elevators control equipment:
- a. Traction elevators controls shall be I Control by Motion Control Engineering (MCE) or Galaxy by GAL Manufacturing.
  - b. Hydraulic elevator controls shall be PHC by Motion Control Engineering (MCE) or Galaxy by GAL manufacturing.
  - c. Freight door control system shall be a variable frequency drive system by Courion Industries.
8. Control features in addition to code required minimums:
- a. Independent service.
  - b. Emergency power sequencing shall be determined by size of emergency generator. Wiring, conduit and signal to initiate emergency power sequencing shall be by electrical contractor.
  - c. Controlled access operation shall be by card reader and connected to security system. Installation of card readers, wiring from machine room to card readers, and interface of elevator control with security controller shall be by elevator contractor.
  - d. Seismic operations shall include counterweight displacement device and machine room seismic switch.
9. Elevator machines:
- a. Gearless machines shall be AC or DC by Imperial Electric or approved equal.
  - b. Geared machines shall be Hollister Whitney with AC motors by Imperial Electric or approved equal.
  - c. Rope break shall be Hollister Whitney, Model RopeGripper.
10. Elevator drives:
- a. Gearless shall be SCR or VVVF by MCE or Magnetek.
  - b. Geared shall be VVVF by MCE or Magnetek.

11. Hydraulic jack assembly:
  - a. Protection shall be PVC with inspection and monitoring system.
  - b. Braking device shall be Adams Elevator, Model LifeJacket.
12. Car guide assemblies shall be 10-inch roller guides on traction elevators.
13. Exhaust fan shall be a two speed Morrison, Model OE.
14. Protective pad shall be Palmer Pads with Adapt-A-Clamp. Each elevator shall be provides with stainless steel pad hooks and one set of protective pads. Per each elevator size in each bank of elevators.
15. Door operator shall be GAL Manufacturing, Model MOVFR.
16. Door gibs shall be Parts Specialist, Inc., Number 2213R1.
17. Door protection device shall be Adams, Model GateKeeper 2000.
18. Railing on top of cab shall be Cartop Handrails where a space greater than one foot square exists between the elevator and the hoistway.
19. Closeout shall include a complete set of replacement boards for the elevator control and drive, all diagnostic tools, and complete owner manuals for all components in both hard copy and electronic.
20. Warranty shall be for 12 months after inspection by licensed state inspector and final acceptance of all elevator work.
21. Maintenance and call back service shall be for 12 months upon acceptance of equipment by Owner
22. Electrical items not by elevator contractor:
  - a. Disconnects which shall be Bussman Power Modules with shunt trip devices.
  - b. Surge suppression which shall be TVSS by innovative Technology, Inc.
  - c. Card readers which shall be LENEL Security Systems through Tech Electronics.
23. A 20A clean-up receptacle shall be installed in each elevator COP (Car Operating Panel) for housekeeping.

#### INSTALLATION

1. Install the elevator in accordance with ANSI A17.1.
2. Install machine room equipment with clearances for maintenance.
3. Install items so that they may be removed for maintenance.