

## Design and Construction Standards

### Division 14 Conveying Equipment

#### General

In general, follow the guidelines below when designing, specifying and installing elevators and other conveying equipment. Unless specifically indicated otherwise, these guidelines are not intended to restrict or replace professional judgment.

#### Section 11 20 00 Elevators

1. Elevator Manufacturers and types shall be verified with the University prior to design and bidding, however generally acceptable manufacturers include:
  - a. Detroit Elevator Co
  - b. Kone Elevator Co.
  - c. Schindler Elevator Co.
  - d. Thyssen Krupp Elevator Co.
  - e. Note: Above is not a list of elevator manufacturers; it is a list of **INSTALLERS** only. **Elevator INSTALLER** must provide the equipment specified.
2. Traveling cables shall have flame retarding and moisture resisting outer cover. They shall be flexible and suitably suspended to relieve strains in the individual conductors. Provide the required quantity of conductors (including two shielded conductors for telephone per elevator) plus at least 10 percent spares. All wiring between telephone cabinet in car and a junction box in elevator machine room shall be provided by the elevator contractor. Conductors shall be numbered to correspond to numbered terminals at the car and machine room.
3. Each elevator car shall be provided with a suitable lamp fitted with a wire lamp guard on top of the car and a GFCI duplex plug receptacle.
4. Unless otherwise specified, control wiring shall be minimum size #18 AWG. Wire size shall be large enough so that the voltage drop under inrush conditions will not adversely affect operation of the controls.
5. Electrical Receptacle in Car: Provide duplex GFCI electrical receptacle in car.
6. Receptacle approximately 2" above finished floor below car station. Provide matching face plate on receptacle.
7. The elevator equipment shall be designed to limit the total harmonic distortion (THD) reflected back into the power system to the following values at any motor speed from 50 to 100 percent.
8. For rise up to 45 feet - Select hydraulic type elevator machine. Specify a dry pumping unit. That is, the pump, motor and valves should not be located in the hydraulic reservoir. (Note: Piston stabilizers not allowed)
9. For rise above 45 feet - Select electric traction machines.

10. Design at least one elevator in each building to serve the mechanical equipment floor(s) of the building.
11. Elevators used in residential facilities are to be stainless steel with raised panels.
12. Stainless Steel Car Door and frames are preferred.
13. On both new and remodeling installations, premium quality heavy duty door operators and track assemblies shall be specified to provide high performance operation.
14. Tracks And Roller Guides: All tracks shall be steel. All roller guides shall consist of three sound reducing wheels and shall be precision type ball bearing steel with Durabond polyurethane tires. Roller guides shall be held in contact with the rail by means of adjustable devices. Roller guides shall run on dry unlubricated guide rails. Car rollers shall be a minimum of six inches in diameter. Counterweight rollers shall be a minimum of three inches in diameter. Elevator car doors are to be protected by full door infrared reversal devices with multiple beams that cover at least every six inch area of the opening.
15. Car Position Indicator: Installed at Main lobby floor.

#### **Section 14 42 00 Wheelchair Lifts**

1. Wheelchair lifts are to be used a last resort when an elevator is not practical, and only with written authorization of the EMU Project Manager.
2. The University prefers vertical lifts over incline lifts.
3. Full architectural hoist ways for lifts are preferred.
4. Only roped hydraulic lift mechanisms are approved for use.
5. Paddle-type switch controls are required (as opposed to push buttons) for easier use.
6. Minimum load capacity is 750 pounds.
7. The lift platforms must include a side-panel-mounted, spring-loaded seat that, in retracted position, does not impinge on the required clear width of the platform.
8. Platform guards are required on both sides of the platform be equipped with handrails.
9. Only electric-eye type safety device are approved for use.
10. If provided, hoist ways around the tower (lifting mechanism) must be designed for easy removal for access to machinery.
11. Doors must be self-closing, swinging type. The University requires doors to operate quietly.
12. No hazardous protrusions are permitted. Special attention may be necessary regarding the interlock device.

#### **End of Division 14 Conveying Equipment – Construction Standards**