

SAFETY ENGINEER ELEVATORS
Task List 2015

1. Observes parts of elevators, escalators, hoists, and similar equipment including but not limited to the following during installation and required inspection for defects, conformance with plans, correct installation, and/or safe operation in conformance with applicable laws, ordinances, codes and regulations:
 - a. elevator car enclosures;
 - b. elevator car exteriors;
 - c. beams;
 - d. cables and associated connectors and guards;
 - e. sheaves and related devices such as guards and restraints;
 - f. chains and guards;
 - g. gears and guards;
 - h. drive sprockets and guards;
 - i. guide rails and their supports;
 - j. belts and guards;
 - k. counterweights, guards, and how they are secured in place;
 - l. hydraulic, spring, or solid buffers;
 - m. hydraulic cylinders, pistons, and connections;
 - n. electrical fittings such as switches, switch boxes, wiring, fuses, and/or circuit breakers;
 - o. solid state relays and other control circuits;
 - p. fly ball and centrifugal governors;
 - q. hoistway construction including enclosure, doors, and vents;
 - r. machine room construction including electrical clearance, headroom, and absence of extraneous equipment;
 - s. pit construction including access, lighting, and clearance,
 - t. mechanical and electrical safety devices such as door interlocks, stop switches, skirt switches, and car safeties;
 - u. and other parts such as bolts, handrails, and skirts
2. Visually examines welds on rail brackets and in other construction such as escalator trusses, for correct type and spacing, and for cracks, irregularities, or other defects in order to avoid any possible issues that may occur.
3. Calculates (using calculator or a specific database) such quantities as allowable loads on elevator hoists, escalator braking distances, and vent sizes.
4. Observes a running (all aspects of normal operation) test performed by an elevator mechanic with equipment loaded at rated maximum load or other specified amount for performance according to specifications and/or to applicable City and State laws, ordinances, codes, and regulations.
5. Observes the buffer and "safety" tests of elevators, performed by running the elevator onto the buffer at rated speed and rated load and then running the counterweight into the buffer at rated speed in order to ensure all parts are working properly and safety regulations are being applied.
6. Observes the brakes on elevators and hoists, performed by demonstration of braking to ensure all parts are working appropriately and safety regulations are met.
7. Observes brakes on escalators, performed by having the mechanic use a torque wrench to demonstrate that the brakes are adjusted to the manufacturer's specifications for performance according to specifications and/or to applicable City and State laws, ordinances, codes, and regulations.
8. Observes governors, performed by removing connections to the equipment, running the governor with an electric drill, and checking the speed with a tachometer or by observing the governor in operation to see that mechanical and electrical devices operate properly for performance according to specifications and/or to applicable City and State laws, ordinances, codes, and regulations.
9. Observes control circuits, performed by running the equipment with different parts of the circuits taken out of service and comparing the performance with performance when the disconnected circuits are restored to operation for performance according to specifications and/or to applicable City and State laws, ordinances, codes, and regulations.

10. Observes safety devices, performed by running the elevator normally and opening and/or overriding switches and observing the performance of the safety devices for performance according to specifications and/or to applicable City and State laws, ordinances, codes, and regulations.
11. Reports hazardous conditions and/or violations of applicable laws, ordinances, codes, and regulations by writing an "order to comply" and giving it to the building owner or owner's representative and putting a copy on file in order to provide information to interested parties.
12. Investigates accidents involving elevators, escalators, and similar mechanical and/or hydraulic lifting devices by interviewing complainants, witnesses, building engineers, and/or superintendents and by examining the equipment involved in order to determine the cause(s) of the accident, and to prevent recurrences
13. Inspects elevators, escalators, and similar mechanical and/or hydraulic lifting devices damaged by fire or earthquake, by visually identifying cracks, misalignment, etc. and specifies needed repairs in order to have equipment restored to safe service.
14. Uses instruments and gages such as tachometers, voltmeters pressure gages, and calipers to check speeds, power supplies door closure pressures, and size and/or diameter of ropes or cables.
15. Seals operating devices of unsafe elevators, escalators, and similar mechanical and/or hydraulic lifting devices by opening the main line disconnect switch in the machine room, attaching a metal seal to prevent closing the switch, and a red tag in order to prevent use of the equipment before repairs have been made.
16. Discusses such matters as installation, operation, and repair of elevators, escalators, and similar mechanical and/or hydraulic lifting devices with supervisors and Department personnel, building owners or managers, engineers, installing technicians, and other interested parties for such purposes as explaining legal requirements or resolving problems.
17. Explains hazards, laws and/or other penalties to such persons as building owners and installing technicians in correcting defects and/or in making repairs to elevators, escalators, and similar mechanical and/or hydraulic lifting devices in order to gain cooperation of parties and ensure safe operation of the equipment.
18. Interprets construction plans, performance charts, and other graphic materials in order to understand requirements for installation and performance of elevators, escalators, and similar mechanical and/or hydraulic lifting devices.
19. Reads such material as notes from supervisors, reports of previous inspections, and specifications for elevators, escalators, and similar mechanical and/or hydraulic lifting devices in order to get such information as job assignments, possible problems, and requirements for installation and performance of elevators, escalators, and similar mechanical and/or hydraulic lifting devices.
20. Keeps up to date with laws, ordinances, codes, and regulations relating to installation and operation of elevators, escalators, and similar mechanical and/or hydraulic lifting devices by researching applicable articles, journals etc. in order to apply their requirements to inspections and to explain them to others such as building owners or installation technicians when necessary.
21. Makes depositions and/or testifies in court regarding accidents or compliance/noncompliance with City and State laws, ordinances, codes, and regulations.
22. Completes forms relating to inspection of elevators, escalators, and similar mechanical and/or hydraulic lifting devices and other forms by checking off items on lists and making written entries in blanks provided in order to ensure that inspections and work records are complete and correctly documented.
23. Writes "orders to comply" describing hazardous conditions and/or violations in order to compel compliance with city and state laws, ordinances, codes, and regulations to be sent to owners or building reps.
24. Writes memos, reports of unusual conditions found during inspections, results of investigations, and other material related to inspection of elevators, escalators, and similar mechanical and/or hydraulic lifting devices in order to provide information to interested parties.
25. Drives personal vehicle in order to get to inspection sites.