



## Elevator and Escalator Maintenance

The maintenance of a building's transportation system is in many ways analogous to maintaining a car or fleet of vehicles. Both involve tons of machinery travelling through space, sometimes at high speeds, and the safety and convenience of passengers remain the highest priorities. With an automobile, a manufacturer designs and constructs the product which may then be maintained by a dealer of that same manufacturer. Conversely, a GMC owner may have his truck serviced at the local Ford dealership, or by a private garage. In many jurisdictions, annual inspections are required to ensure that the vehicle's safety systems (brakes, exhaust, etc.) are functioning properly.

Regardless, the vehicle owner is ultimately responsible for the safety of his car or truck. The same is true for elevators and escalators: Ultimately, it is a building owner who is responsible for having building transportation that is operational and safe, and for orchestrating the work of manufacturers, maintenance personnel and inspection officials to make this happen.

A common public misconception is that the manufacturer of an elevator or escalator is responsible for maintaining the equipment for the life of a building. An elevator with the original equipment manufacturers' (OEM) name on the inside wall does not mean the quality of its ride and its safety are under the purview of that OEM.

In fact, elevator and escalator manufacturers are only responsible for providing code-compliant equipment to the building along with the technical information necessary for the safe maintenance and inspection of the equipment. In the case above, the OEM provides this information to the building owner, but a nationwide or local elevator service company may maintain the equipment once the building is opened and occupied.

The *Safety Code for Elevators and Escalators*, ASME A17.1/CSA B44 requires a Maintenance Control Program (MCP) specific to the types of the equipment in the building and its specific needs. While the owner bears the final responsibility to have an MCP, building owners can, and do, engage the maintenance company or elevator consultant to prepare their MCP. Finally, in some jurisdictions, state or city elevator inspectors perform the inspections of elevators and escalators required by the code, checking that all of the maintenance records are in order. In other jurisdictions, these services may be performed by third-party inspectors hired by either the jurisdiction or the building owner.

Minimum requirements for elevator and escalator maintenance and inspection are established by the model *Safety Code for Elevators and Escalators*, ASME A17.1/CSA B44 and may be augmented by local laws or regulations. In most jurisdictions the elevator company and the elevator mechanics are required to be licensed. Qualifications for elevator inspection personnel are established by the ASME QEI-1 *Standard for the Qualification of Elevator Inspectors*. Meeting these standards is mandatory according to most jurisdictions' laws or regulations.

The aspects of elevator maintenance include but are not limited to:

**Cleanliness** of elevator cars, car tops, pits, machine rooms and machines.

**Lubrication** of guides, rails, suspension means, safety linkages and machines.

**Adjustment** of doors to ensure full closure at a correct speed and proper operation of the door reopening devices.

**Inspection** of buttons, key switches, lights, indicator lamps, and audible indicators.

**Testing** of elevator control system, acceleration and stopping capabilities, safety circuits, fire safety features and electronics.

**Review** of the elevator machine's mechanical condition, adjusting or replacing gears, brakes, bearings or ropes when needed.

Check the brakes, keep the motor and its parts clean, lubricate what needs lubricating, test the safety features. It's really not that different from maintaining what's sitting in any given driveway.

For effective elevator and escalator maintenance, each player has a unique responsibility:

- Equipment manufacturers must install elevators and escalators that meet the strictest safety requirements.
- Building architects and designers must design the envelope in which these machines sit, meeting all of the fire safety, seismic, environmental and structural conditions needed for a safe system.
- Maintenance service providers, whether from the OEM, another major manufacturer or a small independent company, must perform the monthly or yearly safety tests and inspections.
- Building personnel must keep elevator cars and lobbies free of debris or other hazards.
- State, municipal or third-party inspectors provide an unbiased perspective, making sure the equipment is in safe operating condition and that the MCP is in order and being adhered to.
- Finally, the building owner has the ultimate responsibility to see that all of these players are performing their jobs properly and that the equipment is safe for its riders. Working together as a team, we must all do our part to keep our building

transportation – and our riders – safe.

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