

Escalator Safety

Escalators are widely used as “people movers” in shopping malls, office buildings, sports arenas, stadiums, and transportation terminals. A single escalator, four feet wide, operating at 90 feet per minute, can handle between 4,000 and 8,000 passengers per hour.

Although escalators are generally designed and installed with safety and efficiency in mind, accidents and injuries can occur. Common causes of accidents include:

- Unsafe floor conditions, poor housekeeping at landings.
- Sales counters, signs displays that hamper passenger movement at landings.
- Lights, mirrors, signs, displays that distract passengers, causing them to misjudge their step and stumble.
- Passengers’ failure to step on the center of a step tread.
- Passengers’ overshoes, sneakers, or other shoes that catch in the combplate, or at the side of the moving steps.
- Passengers who “ride” hands on the handrail beyond the combplate and back into the handrail return.
- A passenger (or other person) that accidentally or deliberately presses the emergency stop button.
- A package, stroller, wheel chair, or other object placed on the escalator.
- Unsupervised children who use the escalator as a toy.
- Adult passengers’ failure to hold their child’s hand and keep the child in a standing position.
- Passengers who walk up or down a moving escalator.
- Passengers’ failure to hold onto the handrail.
- Passengers who reach or lean over the handrail.

To eliminate/reduce/control the frequency and severity of escalator accidents, the following guidelines should be implemented:

General

- As a minimum, escalator design, construction, and installation should conform to the American National Standards Institute (ANSI) Elevator and Escalator Code.
- To assure adequate escalator capacity and entry and exit floor space, a study of anticipated traffic volume should be completed before escalator facilities are installed.

A single escalator, four feet wide, operating at 90 feet per minute, can handle between 4,000 and 8,000 passengers per hour.

- Metal rails, stanchions and ropes, or extensions of the balustrade newels should be installed to prevent crowding at landings.
- Floor areas adjacent to the escalator should be well-maintained, slip-resistant, and kept clear of all foreign objects at all times.
- At the escalator landing, adequate space should be provided between the escalator and sales counters and other physical structures.
- Displays, manikins, etc., should not be located so that they distract passengers riding on, or stepping off or on the escalator.
- An astragal guard should be provided at the junction of the outer balustrade and the ceiling/soffit.
- Floor opening protection should be extended to the floor so that objects cannot fall or roll under them. Rails around escalator floor openings should be sufficiently high or otherwise designed to prevent children from climbing onto them, and adults from sitting on them or leaning over the rail into the escalator well.
- Display lights, overhead lights, and spotlights should be placed and aimed so they do not “blind” passengers.
- Mirrors should not be located near escalator entrances and exits.
- “Please Hold Handrail and “Do Not Take Shopping Carts/Strollers/Wheelchairs on the Escalator” signs should be posted at all escalator landings.
- Directional signs and floor number marking should be located at all escalator landings.
- A 2 inch-wide yellow warning strip should be applied to all step tread edges.
- Lights should be installed below the landings to alert passengers.
- Handrail guards should be provided where handrails enter the balustrades.

Maintenance

- All escalator parts and drive machinery should be inspected regularly by qualified personnel.
- Escalators should be well-maintained, and safety devices should be tested in accordance with the manufacturer’s specifications and all applicable codes/ordinances.
- Machinery area pits should be cleaned of dust and debris on a periodic basis.
- Skirt switches should be checked and tested periodically.
- If the moving handrail is made of canvas, duck, or rubber, it should be checked periodically to make sure that tension is adequate.
- Once an escalator has been stopped, it should be restarted only by a designated, qualified employee who has made an inspection and found the escalator to be free of hazards and defects.
- **Training-Employees should be trained to:**
 - Report promptly any unsafe acts or conditions they observe.
 - Know how to handle “routine” problems such as unaccompanied children

playing on the escalator, passengers attempting to place shopping carts, strollers, or wheelchairs on the escalator, etc., as well as escalator accidents.

- Know the location of all emergency stop buttons.
- Set an example in the correct use of escalators:
 1. Do not carry heavy or bulky items onto an escalator.
 2. Do not walk up or down the escalator while it is in motion.
 3. Hold onto the handrail at all times.
 4. Stand with feet centered on the steps.
 5. Face the direction of travel.
 6. Enter and exit the escalator safely.
 7. Learn the location and operation of the emergency stop button.
 8. Stop the escalator if an accident occurs or appears imminent.
 9. Do not restart the escalator unless authorized to do so.
 10. Keep floor landing areas clear of fixtures, boxes, and other foreign objects.

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