

Glossary Of Building Transportation Terms And Safety Features

General

ASME A17.1/CSA B44 - The Safety Code for Elevators and Escalators, published by ASME and the basis for all local elevator codes in North America.

ASME A17.7/CSA B44.7 - Performance-Based Safety Code (PBC) for Elevators and Escalators, published by ASME, assures equivalent safety requirements along with ASME A17.1/CSA B44. It provides Authorities Having Jurisdiction (AHJs) with an objective and structured method for approving new technology while ensuring continued elevator safety.

Elevator

Accredited Elevator/Escalator Certification Organization (AECO) - An ANSI or SCC accredited, independent organization concerned with product safety evaluations that awards elevator companies with certificates of conformance with ASME A17.7/CSA B44.7.

Alarm Bell - A bell operated by a push button in an elevator car. This is mounted either in a hoistway or adjacent to a landing where it may be heard at any time to call attention to a need for assistance in the elevator.

Car Operating Panel - The assembly of buttons, switches and indicator lights inside the elevator car used for operation and control.

Code Compliance Document (CCD) - A document provided by the manufacturer for each design of an elevator system, sub-system, component or function that describes how compliance with the ASME A17.7/CSA B44.7 is achieved.

Counterweight - Weight connected by the hoist ropes to counterbalance the weight of the car. The counterweight is equal to the weight of the car plus approximately 40 percent of its rated load.

Destination Dispatch (Destination-Oriented) Elevator System - an elevator system that provides lobby controls for the selection of destination floors (typically key pads or touch screens), lobby indicators designating which elevator to board, and a car indicator designating the floors at which the car will stop.

Door Operator - A motor-driven device mounted on the elevator car that opens and closes the car doors. On freight elevator doors the device is mounted on the hoistway door assembly.

Door Reopening Device - The device on an automatic closing door that senses an obstruction, and changes the door motion by stopping it or causing it to reverse.

Double-Wrap - A common roping arrangement on traction elevators. To increase the traction, the hoist ropes pass around a secondary sheave mounted beneath the main drive sheave and back over the drive sheave again.

Drive Chain Tensioning Device - Controls the correct tension of the drive chain.

Drive Machine - The power unit that applies the energy necessary to raise and lower any elevator, material lift, or dumbwaiter car or to drive an escalator, an inclined lift, or a moving walk.

Drive Sheave - The grooved wheel of a traction-type hoisting machine over which the hoist ropes pass, and by which motion is imparted to the car and counterweight by the hoist ropes.

Drum - The cylinder of a drum type-hoisting machine in which the elevator car hoist ropes and drum-counterweight ropes wind and unwind to raise and lower the car and counterweight.

Drum Counterweight - On winding-drum machines, a counterweight which balances part or all of the weight of the elevator car depending on whether or not a car counterweight is used, along with part of the capacity load: also called a machine counterweight.

Elevator - A hoisting or lowering mechanism, designed to carry passengers, equipped with a car or platform which moves in fixed guides and serves two or more landings. On average, an elevator travels 4-5 floors (or 40 feet), and carries an average of five people per trip.

Emergency Stop Switch - A device located in the car which, when manually operated, causes the electric power to be removed from the driving-machine motor and brake of an electric elevator or from the electrically operated valves and/or pump motor of a

hydraulic elevator. This device is not found in modern passenger elevators.

Emergency Exit - An opening at the top of an elevator used by elevator and emergency personnel which can only be opened from the top of the car.

Elevator Brake - An electromechanical device used to prevent the elevator from moving when the car is at rest and no power is applied to the hoist motor. It must stop a fully loaded elevator.

Fault Finder - A display for elevator personnel that indicates elevator functions and malfunctions.

Fire Fighters Emergency Operations:

- Phase I Emergency Recall Operation: The operation of an elevator when it is automatically or manually summoned to the recall level and removed from normal service because of firefighters' emergency operation activation.
- Phase II Emergency In-Car Operation: The operation of an elevator by firefighters in which the elevator is under their control.

Geared Traction Machine - A traction machine in which the power from the motor is transmitted to the drive sheave through reduction gears. A mechanically applied, electrically released friction brake is part of this machine.

Gearless Traction Machine - A type of elevator hoisting machine where the hoist ropes pass over a traction drive sheave, an integral part of the armature. It is called gearless because no geared reduction unit is used. A mechanically applied, electrically released friction brake is part of this machine.

Global Essential Safety Requirement (GESR) - ASME A17.7/CSA B44.7 requirements that identify safety objectives but provide flexibility in the method of attaining compliance with the GESR.

Governor - A constant operating-speed monitoring and detection device that, at predetermined speeds, provides signals to the controller and imparts a retarding force to activate the car or counterweight, safely stopping the moving elevator.

Guide Rails - Steel T-shaped, round, or formed sections with guiding surfaces installed vertically in a hoistway to guide and direct the course of travel of an elevator car and elevator counterweights.

HELP Button - A device, found on modern elevators in place of the alarm button, used for emergency communications. When pressed, it initiates a call for assistance and establishes two-way communications.

Hoist Ropes - The wire ropes used to raise and lower an elevator car.

Hoistway - The opening or path through which the elevator travels. It is also referred to as the shaft.

Hydraulic Elevator - Often used in buildings with two to five floors, hydraulic elevators move the car by pumping oil in and out of a steel cylinder, raising or lowering the elevator car.

Machine-Room-Less (MRL) Elevator - A type of elevator where the driving machine is typically located in the hoistway, eliminating the need for a separate machine room

Occupant Evacuation Operation - The operation of an elevator system for occupant evacuation under emergency conditions.

Pit - The portion of the hoistway extending from the lowest landing sill to the bottom of the hoistway.

Safety, Car or Counterweight - A mechanical device attached to the car frame or an auxiliary frame, or to the counterweight frame, to stop and hold the car or counterweight in case of the following conditions: predetermined overspeed, free fall, or if the suspension ropes slacken.

Terminal Landing - The top and bottom elevator landing area.

Traction Elevator - Typically used in buildings with five or more floors, traction elevators consist of a car and counterweight attached to opposite ends of a hoist rope, moved by a traction machine.

Traction Machine - An electric machine which uses the friction between the hoist ropes and the machine sheave to move the elevator car.

Travel (Rise) - The vertical distance between the bottom and top terminal landing of an elevator.

Escalator

Balustrade - The sides of the escalator, which are usually made of stainless steel, aluminum, glass or plastic. It includes the skirt panels, decks and handrails.

Balustrade Lighting - A lighted panel on an escalator, located parallel to and immediately above the skirt panel, which runs the full length of the balustrade from newel to newel, or full-height transparent panels with a lighting system behind them.

Broken Step Chain and Drive Chain Device - A switch mounted on the lower end of an escalator designed to stop the escalator

if the step chain breaks.

Broken Step Device - Detects broken, damaged or misaligned steps and shuts down the escalator before it can affect passengers.

Cleated Risers - Vertical cleats on escalator step risers that mesh with slots on the adjacent step treads as the steps move from vertical to horizontal

Controlled Stop - An escalator braking system that provides a smooth, controlled stop regardless of passenger load or direction of travel, usually activated in the event of a power failure, when other safety devices have been activated or when the escalator is manually turned off.

Comb - The toothed portion of an escalator combplate designed to mesh with a grooved step. They are often a highly visible color to alert passengers of the transition between the moving steps and the fixed combplate.

Combplate - The portion of the landing adjacent to the escalator step that consists of one or more plates attached to combs.

Comb Segments - Metal or composition plates with teeth that project into the grooves of the step tread on an escalator. The plates are fastened to the inner edge of the combplate.

Combstep Impact Device - Detects when an object is caught beneath or hits the combplate in the direction of travel and shuts down the escalator.

Combplate Lighting - Lights mounted in the escalator skirt panels on each side of the upper and lower combplate that illuminate the area where the steps enter or leave the combplates.

Escalator Brake - Applies a controlled force to stop and hold the escalator system under normal and emergency stopping conditions.

Fault Finder - A display for elevator personnel that indicates escalator functions and malfunctions.

Handrail - Provides a secure handhold for escalator passengers. It glides along the top of the balustrade and moves in synch with the speed of the steps. An escalator handrail is a continuous belted handhold for passengers made of laminated rubber, canvas, and a stainless steel cord that moves over the top of the balustrade and newels. An elevator handrail is a railing serving as a support handhold in an elevator car.

Handrail Entry Device - Helps prevent hand injuries by automatically stopping the escalator if an object approaches or gets caught between the handrail and balustrade at the location where the handrail enters the newel.

Handrail Guards - Helps prevent items from becoming entrapped in the handrail opening in the newel. A guard is usually made of rubber and fits over the outside of the handrail at a point where the handrail enters or leaves the balustrade; it is designed to keep a person's fingers out of the handrail opening.

Handrail Guide - Ensures the correct alignment of the moving handrail while preventing the lifting of the handrail from its steel guide.

Handrail Speed Monitoring Device - Electronically monitors handrail speed and shuts down the escalator if the handrail and step speeds are not synchronized.

Missing Step Device - Detects missing escalator steps before the opening is visible to passengers and shuts down the escalator.

Newels - Extensions of the balustrade, located at both the lower and upper limits of the escalator, that assist passengers in boarding and exiting the escalator.

Skirt Panels - Panels located parallel and immediately adjacent to the sides of the steps. They reduce potential for step/skirt entrapment.

Skirt Obstruction Devices - Automatic switches located within or behind the skirt panels that are activated when an object becomes caught between the skirt and step as the step approaches the upper and lower combplate. They stop the escalator once activated.

Step Chain - An endless steel chain that forms the connecting links between each of the steps and the drive machine. Escalator motion is transmitted to the steps through the step chain.

Step Demarcation Lights - Green fluorescent lights mounted below the steps at the entrance and exit of the escalator. They illuminate the joint between the steps.

Step Level Device - A sensing device that shuts down the escalator in the event that the horizontal level of a step has dropped by more than 1/8 of an inch.


Step Tread - The top surface of an escalator step on which passengers stand. The surface has narrow slots into which the comb teeth mesh.

Truss - The escalator frame.

Moving Walk - A type of passenger-carrying device on which passengers stand or walk. The passenger-carrying surface remains parallel to its direction of motion and is uninterrupted.

NOTES:

1. These definitions are intended to assist the layperson in understanding industry terminology and do not necessarily reflect the definitions found in ASME A17.1/CSA B44 and ASME A17.7/CSA B44.7.
2. See NEII-1 for additional definitions.

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