

# Escalators and Moving Walkways

## When do the Standards Apply?

As of January 1, 2017, **2016 Building Energy Efficiency Standards** (Energy Code) has requirements for escalators and moving walkways located in airports, hotels, and transportation function areas. The requirements apply to new construction or when adding escalators and moving walkways to an existing building, and to existing escalators and moving walkways undergoing major alterations involving mechanical equipment or controls in these same locations.

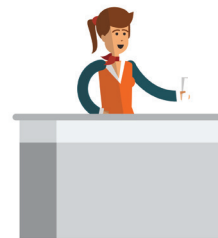
The Energy Code defines a transportation functional area as the ticketing, waiting, baggage handling area, or concourse in an airport, bus, or rail terminal or station, subway or transit station, or marine terminal.

The goal behind this measure is to save motor energy by slowing the escalators and moving walkways when unoccupied. The scope is limited to areas that have intermittent traffic and long periods of nonuse. It would not be cost effective in areas such as shopping malls or amusement parks that typically have steady traffic.

Requirements for escalators and moving walkways can be found in the California Code of Regulations, Title 24, Part 6, §120.6(g). The requirements are mandatory and may not be traded off when using the performance method of compliance.

## Transportation Function Areas

### TICKETS



### TICKETING AREA



### WAITING AREA



### BAGGAGE HANDLING AREA

Source: California Energy Commission Video - Mandatory Requirements for

Watch the full video at:

<https://youtu.be/Un4cSIJgl4c>

## What are the Requirements?

Escalators and moving walkways must comply with the control, acceleration, and speed requirements specified in ASME A17.1/CSA B44-2013.

### Controls

Occupancy sensors must meet the following installation requirements:

- Sensors must be in locations that minimize false signals
- Pedestrians on adjacent escalators cannot trigger sensors
- Sensors must not encounter any obstructions that could adversely affect performance
- Ultrasonic occupancy sensors must not emit an audible sound

The intermittent speed controls must meet the following functional requirements:

- After being in an unoccupied condition for more than three times the length of time needed for a full ride, the escalator should slow down to the minimum allowed speed
- While in an unoccupied condition, passenger detection cannot be bypassed by approaching the entrance from any angle

- When approaching the escalator or moving walkway at an average walking speed in an unoccupied condition from the wrong direction, an alarm must sound and the escalator and moving walkway must reach full speed before boarding

### Acceleration and Speed Requirements

To ensure maximum passenger safety, escalator and moving walkway accelerations and speeds must comply with the requirements in ASME A17.1/CSA B44-2013.

When not conveying passengers, they must slow to the minimum speed allowed by ASME A17.1/CSA B44-2013. See Table 1 for allowable speeds and accelerations.

### Acceptance Testing

Escalators and moving walkways must meet the installation and functional acceptance requirements outlined in this fact sheet. Compliance with these requirements must be documented on the NRCA-PRC-13-F form. Details of the acceptance test procedures are specified in Reference Nonresidential Appendix NA7.15.

**Table 1: ASME A17.1/CSA B44-2013 Acceleration and Speed Requirements**

Equipment Type	Slope (degrees)	Maximum Acceleration	Maximum Speed	Minimum Speed
Moving Walkway	≤ 8	1.0 ft/s <sup>2</sup>	180ft/min	10ft/min
	> 8 ≤12	1.0 ft/s <sup>2</sup>	140ft/min	10ft/min
Escalator	All	1.0 ft/s <sup>2</sup>	100ft/min	10ft/min

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