

CHAPTER 2 - CONSERVATION AND EFFICIENCY: BUILDING SYSTEMS

500

502.03 ELEVATORS AND ESCALATORS



INTENT

To promote energy savings in vertical transportation systems with the use of efficient drive technologies and controls.

REQUIREMENT

1. Escalators:

For all new buildings, escalators must be fitted with controls to reduce speed or to stop when no traffic is detected. Escalators shall be designed with energy saving features as described below:

- a. Reduced speed control: The escalator shall reduce to a slower speed when no activity has been detected for a maximum period of 3 minutes. Detection shall be by photocell activation, placed at the top and bottom landing areas.
- b. Use on demand: The escalator shall shut down when no activity has been detected for a maximum period of 15 minutes. Use of on-demand escalators must be designed with energy efficient soft start technology. The escalator shall start automatically when required. Detection shall be by photocell activation, placed at the top and bottom landing areas.

3. Elevators (lifts):

For all new buildings, elevators (lifts) must be provided with controls to reduce the energy demand. The following features must be incorporated in traction drive elevators:

- a. Use of AC Variable-Voltage and Variable-Frequency (VVVF) drives on non-hydraulic elevators.
- b. Energy efficient lighting inside the elevator, including controls to turn lights off when the elevator has been inactive for a maximum period of 5 minutes.

SIGNIFICANCE

Having an efficient vertical transportation system is an important aspect of building design. Traditional elevators and escalators are generally inefficient and have higher energy consumption levels. Since, elevator and escalator usage represent a significant proportion of a building's electrical load, selecting energy efficient elevators and escalators have a significant impact on total energy consumption.