

28—Elevators and Plant Railways

side and limits the sum of the clearances on the two sides to $\frac{1}{4}$ in., unless skirt switches are installed

The Elevator Code requires that each balustrade have a handrail moving in the same direction and at substantially the same speed as the steps. Each moving handrail is to extend at normal handrail height (not less than 12 in. beyond the points of the comb-plate teeth at the upper and lower landings). Hand or finger guards are to be provided at the point where the handrail enters the balustrade.

In some localities, barefoot passengers have been injured, and signs warning barefoot persons not to ride the escalator have been posted. Umbrella tips frequently are caught between the grooves and the comb-plate, and this type of accident occasionally results in minor injuries and in damage to equipment.

Many accidents have resulted from attempts to handle baggage on escalators. Suitcases and handbags should not be placed on the steps and, if carried by hand, always should be held parallel to the run of the escalator.

Escalator treads and landings should be of incombustible material affording secure foothold.

Some riders, through inexperience or infirmity, have trouble seeing the parting point where treads rise or descend and the point where they level off. To aid them especially, the Elevator Code calls for illumination of at least 2 foot-candles on all tread surfaces, but some firms provide additional warnings. In one case, all risers were painted a bright yellow, so that the rising face would contrast with the tread. In another application, green lights (red is also a good color) were mounted inside the truss at top and bottom to shine through the treads where they break away and come together—the trouble points.

Some manufacturers mark the edges of the steps to emphasize the lines between adjacent steps. One manufacturer, for example, adds a distinctive color strip to the edge of the step adjacent to the riser of the next step.

Signs reading PLEASE HOLD HANDRAIL are often posted at the top and bottom and are found to be helpful. It is important that no overly conspicuous or distracting signs (such as advertising) be placed near these critical

points. (See Fig. 22-9 on page 587.)

At the various floor levels, directional signs and floor number markings are recommended in order to improve traffic flow from the escalators.

When traffic on escalators is extremely heavy, as in department stores during the Christmas shopping season, proprietors often station uniformed employees at each flight to repeat warnings and, if necessary, help riders on and off.

It is extremely important that no object or construction of any kind obstruct the free flow of passengers from the area at the exit of an escalator. (This area is not a part of the escalator.) Serious accidents have occurred where the flow of traffic from the exit was restricted by a fence or barrier placed at some distance from the escalator.

Fire protection

Protection of escalator floor openings against the passage of fire and smoke is required by the Elevator Code. One of the best safeguards against burnout is to divide buildings of fire-resistive construction into limited areas in which fire can be readily controlled. Vertical openings need to be protected against the passage of fire from story to story. This principle often is disregarded where escalators are installed.

Escalators, accredited as a required means of egress, must be fully enclosed in accordance with the requirements of local laws and ordinances pertaining to interior stairways.

Escalators, not accredited as a required means of egress, must have the floor openings protected by one of the following methods, in accordance with national and local standards and regulations:

- 1 Full enclosures
- 2 Kiosks
- 3 Automatic rolling shutters
- 4 Sprinklers so spaced as to protect the exposed sides of the opening
- 5 Spray nozzles (only where the building area is fully protected by a supervised automatic sprinkler system)

For detailed specifications, see "National Fire Codes," Vol. 4, *Building Construction*