



NFPA Life Safety Code 101 Edition 2006

A section of the NFPA High Rise Fire Safety Code states that each and every floor served by an elevator shall have a stair decent device on each landing. This will eventually become a standard in the courtroom when judge and jury make the decision as to weather or not a reasonable safety plan for the Mobility Impaired was in place during an Emergency Evacuation. The experts (NFPA) have developed this code and strongly recommend that each city and state adopt this ruling.

"7.2.12.2.3* Where the exit providing egress from an area of refuge to a public way that is in accordance with 7.2.12.2.2 includes stairs, the clear width of landings and stair flights, measured between handrails and at all points below handrail height, shall be not less than 48 in. (1220 mm), unless otherwise permitted by the following:

(1) The minimum 48 in. (1220 mm) clear width shall not be required where the area of refuge is separated from the remainder of the story by a horizontal exit meeting the requirements of 7.2.4 (see also 7.2.12.3.4)

(2) *For stairs where egress is in the descending direction, a clear width of not less than 37 in. (940 mm), measured at and below the handrail height, shall be permitted where all of the following are met.

(a) An approved stair descent device is provided on each floor served by the stair.

(b) Additional approved stair descent devices are provided on floors with and occupant load exceeding 200 at the ratio of one device per 200 occupants.

(c) The required approved stair descent devices are provided in an approved location on the floor.

(3) Existing stairs and landings that provide a clear width of not less than 37 in. (940 mm), measured at and below handrail height, shall be permitted."

This is the appendix portion.

"A.7.12.2.3(2) stairway decent devices, using stair-bearing belted tracks for example, provide a safer, more effective evacuation option than carrying an occupied wheelchair or other carried device down the stairs and on landings. The use of stair descent devices is recommended even if egress stairway width satisfies a requirement for 48 in. (1220 mm) of minimum clear width between stairway handrails or between a handrail and a landing wall.

The design, manufacturer, selection, maintenance and operation of such devices should take into account the following recommendations and general guidance information:

(1) Minimum carrying capacity of the device should be 300 pounds (136 kg) rated for the maximum permitted stair slope or pitch of 42 degrees or 1.0 unit vertical for 1.1 units horizontal. The rated maximum carrying capacity and maximum stair pitch should be labeled on the device and the device should only be operated within the labeled limits of load and stair slope or pitch.

(2) Maximum descent speed, without undue restraint by the operator(s), should be limited by device design to 30 in./sec (760 mm/sec) measured along the slope of the stair.

(3) When operated according to manufacturer's instructions and loaded to its maximum stated capacity, the device should come reliably to a complete stop within a distance of 36 in. (910 mm), measured along the landing or stair slope. On a stair with a slope or pitch within the device's maximum stated capability. Undue force should not be required to stop the device or, once stopped, to maintain in a stationary position on the stairs. On walking surfaces other than stairs, the device should maintain a parked position, without rolling, so that the operator can attend to other activity including assisting the passenger to transfer from or to other mobility devices.

(4) Slowing or delays when transitioning between stairway landings and stair flights should cause no more than minimal delay to the movement of pedestrians using the stairway in the vicinity of the device and, generally, should not significantly reduce the flow of evacuees using the stairway system.

(5) When descending stairs, the device should be easily operable by one or two trained ambulatory adults. Above average weight or strength should not be required for proper operation. Lifting or carrying of the device, when occupied, should normally not be required for descent.



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(6) Unless designed specifically for the use on stairs with non-rectangular treads, with operators trained for such use, the device should be operated only on stairways with straight flights having rectangular treads. On straight flights, the device should be designed to have supporting contact with at least two treads except during the transition between landings and stair flights.

(7) The device should be equipped with restraining straps that securely hold the passenger, including arms and legs, to prevent injury. The length and quantity of straps should be designed to accommodate a range of passenger sizes and weights up to the maximum capacity of the device.

(8) The seat or seat sling should have open sides and be positioned at an appropriate height to allow transfer with minimal operator assistance. The specific procedure used for a particular transfer should be determined through discussion between the passenger and the operators.

(9) Setup of the device should be described in procedures posted on requiring no other tools or expertise beyond that of available operators, and taking approximately 10 seconds from its storage condition to being set up ready for transfer.

(10) In addition to descending stairs, the device should be able to travel across ramped or horizontal surfaces, such as stair landings and hallways, so that it can follow an entire egress route to the exterior of the building.

(11) The device's seating system should provide adequate support of the passenger to minimize the potential for discomfort or injury or discomfort, recognizing also that people with physical disabilities who will be the main occupants of the device, are often unusually susceptible to pressure related injuries and spasm while being unable to perceive the warning signs of pain.

(12) Water on the stairways should have no adverse effect on the operation of the device.

(13) If cabinets or storage covers are provided they should include signage or labeling that clearly identifies the device and its use. The device should be readily retrievable from storage without use of a key or special tool.

(14) The building evacuation plan should include the location of the devices, a list of trained operators, a matching list of people with disabilities and other critical information as may be required for the building.

(15) The manufacturer of the device should provide comprehensive training materials with each device. All designated operators should be trained in accordance with these instructions. Evacuation drills that involve actual use of the device by the designated operators, including transfer and transport of building occupants with disabilities, should occur at least quarterly.

(16) The device should be inspected and tested annually in accordance with manufacturer's recommendations. Preventive maintenance should be performed in accordance to the manufacturer's recommendations.

(17) Device capabilities differing significantly from these spelled out in the foregoing recommendations (such as carrying capacity, higher normal speed and fail-safe braking systems) should be disclosed by the manufacturer in a manner readily known to operators whose training should take this into account.

(18) Limitations of the device based on stair nosing geometry and nature of stairway covering should be disclosed by the manufacture in specifications, operating instructions and labeling.

(19) Minimum stairway width requirements, especially at landings where turns occur, should be disclosed by the manufacturer and only devices appropriate to the building's stairways should be provided in the building.

(20) Carrying handles, if installed on the device, should provide secure gripping surfaces and adequate structural and geometric design to facilitate carrying by two or more operators. Carrying might be necessitated by damaged or otherwise irregular walking surfaces that do not facilitate rolling with the device's wheels or tracks. Carrying might also be necessitated by the existence of an ascending stair along the means of egress, for example the exit discharge path.

(21) Unless specialized operator training is undertaken, use of a stairway decent device on stairways with unusually large treads and on escalators should only be attempted if the device is designed for extra long distance between the tread nosings {for example, about 16 in. (405 mm) on escalators as opposed to about 12 in. to 13 in. (305Mm to 330 mm) on typical exit stairways}. Such specialized training might entail maintaining a downward force on the device operating handle."