



Elevator and Escalator Safety

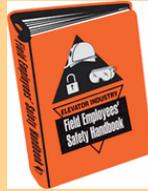
Incidents involving elevators and escalators kill about 30 and seriously injure about 17,100 people each year in the United States, according to data provided by the U.S. Bureau of Labor Statistics' Census of Fatal Occupational Injuries 1992-1998 and the Consumer Product Safety Commission.

Injuries to people working on or near elevators – including those installing, repairing, and maintaining elevators, and working in or near elevator shafts – account for almost half of the deaths. The two major causes of death are falls and being caught in/between moving parts of elevators/escalators. Incidents where workers are in or on elevators or platforms that collapse, are struck by elevators or counterweights, or are electrocuted are also numerous.

Elevators and escalators are potential sources of serious injuries and deaths to the general public and to workers installing, repairing, and maintaining them and fire and rescue personnel. Common injuries are tripping, caught clothing, being hit by closing elevator doors, or falling down an elevator shaft when trying to exit a stalled elevator car. Workers are at risk also, for instance, when cleaning elevator shafts, conducting emergency evacuations of stalled elevators, or doing construction near open shafts. State and local authorities recognize such hazards and require periodic inspections of elevators and escalators.

Elevator Industry Field Employee's Safety Handbook

In the field, workers need to carefully observe their environment and constantly be aware and in compliance to safety regulations. Safety of the elevator industry



workforce is dependent upon a uniform set of safety practices. The Elevator Industry Field Employee's Safety Handbook goal is that field safety be maximized in the industry's safety specialists.

<http://safety.elevator-world.com/handbook.htm>

While the Elevator Industry Field Employee's Safety Handbook is an excellent guide for the field employee, we also recommend each company have an adequate safety, inspection, and maintenance program. Your safety program should outline safety procedures for various types of field operations, including practices and procedures to eliminate hazards, prevent incidents, and avoid injuries and recommended methods to carry out and complete a job safely.

Because elevator and escalator components vary from company to company and because unique or unusual jobsite conditions may exist, it is recommended that your safety plan is updated continuously as a result of unique or unusual jobsite conditions.

We also stress training employees and only using qualified workers for elevator and escalator inspection, repair, and maintenance. VTX employees are experienced and knowledgeable ASME QEI-1 (Qualified Elevator Inspector) certified inspectors, who are educated in local and national codes.

ASME A17.1 Safety Code Elevators and Escalator Handbook

Organizations such as the American Society of Mechanical Engineers (ASME) have set



W. Timothy Eason, Q.E.I.
Vice President

Did you know June was National Safety Month? Safety and health has always been a priority for Vertical Transportation Excellence (VTX). Our Safety and Health Policy, which establishes the safety and health of employees and other affected persons, is a corporate priority adopted by our Directors and is supported by various related policies and procedures.

In 2004, I assumed the role of Safety Manager for VTX. As Safety Manager, I assist VTX employees obtain external training when appropriate. We maintain associated training records and prepare statistics on our safety training activities; conduct safety inspections; and provide interpretation of regulations and compliance guidance related to vertical transportation to design engineers, technicians, and our clients.

To stay current with elevator and escalator safety, our staff participates on various code committees and in the development of the ASME A17.1 Elevator and Escalator Safety Code.

We sincerely hope that you find this information helpful in your day-to-day activities. Feel free to e-mail me directly at teason@vtexcellence.com.

At VTX, our momentum is taking us to new heights. Our group of industry professionals specialize in the design, modernization, maintenance, and inspection of elevators, escalators, moving walks, and technology consulting. We serve the educational, healthcare, commercial, and transportation markets including aviation, nationwide. We recognize that each project requires a detailed, integrated process that is customized to meet the owner's needs. Our designers, industry experts, and analysts have one focus: to help our clients achieve their goals through practical design and program management.

standards for the construction and maintenance of elevators and escalators and for their safe operation. VTX continues to provide insight to our clients in each addition of this newsletter. Please reference the Code Corner and visit our web site www.vtexcellence.com for previous Code Corners.



Safety Committees

Since safety is a top priority at VTX, our President, Patrick J. Welch, is an active member in three National ASME A17.1 Safety Code committees. He also chairs all of the elevator, escalator, and moving walk design working groups for the American Public Transportation Association (APTA). This intimate working knowledge of elevator and escalator design issues provides our client with the latest information available related to elevator and escalator safety code. We design elevator and escalators with the end user in mind to provide appropriate equipment to provide the safest, most reliable elevator and escalator for decades after the project is complete.

VTX's key staff routinely participates on code committees and in the development of the ASME A17.1 Elevator Escalator Safety Code. We are also certified as a third party agent in the Commonwealth of Pennsylvania by the Department of Labor and Industry.

National Elevator Escalator Safety Awareness

National Elevator Escalator Safety Awareness Week is in November. At that time we will elaborate on our ongoing commitment to presenting elevator and escalator passenger safety to local elementary school students. This hands-on training in the safe use of elevator and escalator equipment has been beneficial and shown successful data on improving elevator and escalator safety among the youth.



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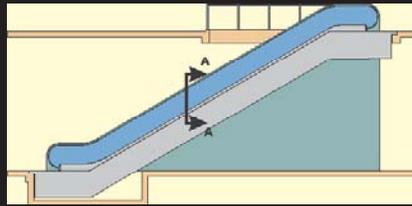
Code Corner

By: Patrick J. Welch

This column is intended to discuss new or existing rules and interpretations that may affect the operations or planning of your vertical transportation systems. This issue focuses on a relatively new rule from the 2000 edition that had a recent interpretation, which emphasizes the importance of understanding the code when designing a new installation.

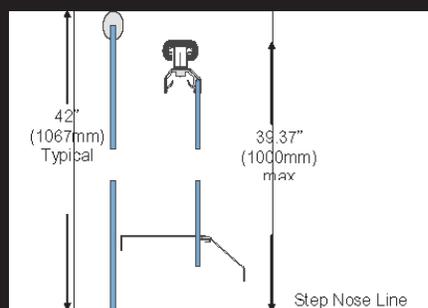
Requirement: 6.1.3.6.6 Floor Opening Protection Adjacent to Escalator Wellway. *Floor openings adjacent to the entire length of the escalator wellway shall be provided with protection in accordance with the applicable building code.*

It is important to understand that this requirement means that the length of the wellway, from top to bottom must be protected. This is not stipulating how to protect the upper or lower ends of an escalator as they pierce a floor to another landing. These two sketches illustrate the point:



The area between the arrows above needs to be protected in accordance with local building codes. What this means is that a handrail or other means of protecting people from falling over the side of the escalator (with a lower handrail height limited to a maximum height of 1m).

This rule came about during harmonization with the Canadian B44 elevator/escalator code as a result of fatalities in Canada and in the United States. This requirement will be difficult in certain atrium installations in malls, retail stores, hotels, airports, and transit applications. Protection similar to what we illustrate below will be required. This sketch illustrates two key points:



1. Where the handrail or balustrade would need to be installed.
2. You can't connect to the escalator itself to provide this balustrade or handrail. There is not a single escalator manufacturer that we have found that will permit this type of protection to be attached to their escalator.

The rules within the A17.1 Code are intended to be clear and unambiguous, but there are often unintended consequences to the rules that leave the reader confused as to the intention of the Code. Each subcommittee of A17.1 addresses interpretations at their regular meetings before any new business to help assure a prompt and responsive clarification.

For example, in 2004 a request for interpretation was submitted on this requirement. A question came up from a designer who thought that the intent was to protect the escalator wellway at the top landing only. Another designer on the same project felt that the wording required the protection of the opening along the inclined portion of the escalator. This is an important distinction because long escalators could have 50 to 100 more feet of handrails. Couple this requirement with the riddle of how to support that handrail and it is easy to see that a clear interpretation was required.

The request for interpretation became Inquiry 03-44 and was first submitted on July 24, 2003. The committee met and discussed the rule at length at the regularly scheduled meeting in October 2003. The subcommittee was unable to come to a resolution so the inquiry was postponed until the next meeting in February 2004.

Upon further consideration, and a lot more discussion and debate, the subcommittee approved a response that the rule does require protection along the full length of the wellway. The Standards Committee approved that response unanimously in May 2004.

This rule and subsequent clarification has a significant impact on building designs with escalators. This is not work that the escalator manufacturer is going to do. Each building design with an escalator that is not directly against a wall will require protection of some significance.

Most malls, department stores, airports, and sports facilities will be affected by this new rule. We hope that this column helps shed light on this new requirement and how it may affect your project!