CHUBB®

Tips to Help Prevent Slip, Trip, and Fall Accidents

A Guide for Lending Institutions

Chubb Risk Consulting

Slip, trip, and fall accidents on the premises of lending institutions represent a significant cost, and are a primary source of accidents for lending institutions, resulting in millions of dollars of liability losses.

In addition to direct liability payouts, slip, trip, and fall incidents have significant hidden costs, such as lost productivity, increased administrative activity, and potential negative publicity within the community. All of these costs negatively impact an organization's bottom line, yet they may be preventable. The fact that so many lending institutions have experienced slip, trip, and fall incidents should motivate lending institution managers to review their risk management programs and to take action to enhance their institution's slip, trip, and fall accident prevention practices.

Chubb has created this resource to help lending institution managers take steps to reduce their liability and other losses from slips and falls.

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Indoors

Flooring Selection

The choice of flooring materials and treatments is one of the most important decisions in preventing slip, trip, and fall accidents. Many factors go into the selection process including cost, aesthetics, maintenance requirements and what activities are taking place. With these factors in mind, time should be taken up front to thoroughly evaluate the advantages and disadvantages of different flooring materials, whether the project involves new construction or is a renovation.

Research studies of how people walk show how even slight elevation changes can result in a trip. Best practices indicate elevation changes of up to 1/4-inch can be left untreated. Changes between 1/4-inch and 1/2-inch should be beveled with a slope of 1:2 (rise:run) and changes greater than 1/2-inch should be accomplished be means of a ramp. Source: ASTM 1637, NFPA 101-7.1.6.2, ADA Stds for Accessible Design, Part 303.

How well a floor surface performs under its expected environmental conditions is another important consideration. A best practice is to compare samples of different flooring under the expected conditions using a properly validated, calibrated and maintained slip meter used by a trained and qualified person and operated in accordance with the manufacturer's instructions. For example, flooring that could become wet with water should be tested under similar wet conditions. Using the same slip meter and conditions is the best way to compare several different types of flooring. Two standards that can be referenced by qualified slip and fall risk engineers include ANSI A1264.2 and NFSI B101.1.

The location of the flooring material being installed should also be considered. It is important to review the manufacturer's ratings and warnings to ensure that a flooring material is used in a compatible environment. For example, the slip-resistant rating and qualities of any material used near entrance/exit doors should be reviewed to ensure it will function with minimal maintenance under wet and snowy conditions and maintain a high slip resistance. Materials that have lower ratings under wet conditions may not be a good choice for this area. Materials in break rooms and kitchenette areas should provide high traction ratings under both wet and greasy conditions. Ramps should not be coated with slippery sealants or waxes.

Many lending institutions are focused on "going green" with an eye towards sustainability. Green building standards such as the United States Green Building Council (USGBC) and their LEED certification program have a credit in the environmental quality category that specifically focuses on entrance way contaminant control. When achieving this credit option, it is important that it doesn't create an unintended consequence in terms of reducing your entranceway's slip resistance.

Floor Maintenance

Improper floor maintenance is another element that can lead to slip- and-fall accidents. Flooring is typically damaged during normal wear, through settling of the building structure, or by physical damage such as dropping or dragging heavy objects. Failure to quickly identify and repair these deficiencies can lead to injuries.

Improper cleaning and finishing techniques by janitorial personnel can turn floors into slip and fall hazards. To prevent unintended consequences, application of any floor cleaner or wax should be conducted in accordance with the manufacturer's recommendations and with a high slip resistance in mind. When wax is necessary, care should be taken to use a high traction nonslip wax, as many wax products can actually reduce the slip-resistant rating of a floor. Furthermore, many floor waxes are not designed for high-speed buffing, which can further reduce the floor's slip resistance. It is critical to ensure that a floor wax is compatible with the flooring material being maintained and to carefully follow the application instructions.

Staircases
Injuries on staircases are a major source of trip and fall accidents. A number of factors contribute to these types of accidents, including:

- Irregular steps
- Busy floor patterns
- Poor illumination
- Poor maintenance
- Slippery steps
- Improperly positioned, absent, or broken handrails
- Doors that open directly onto stairs
- Articles left on stairs
- Broken or eroded treads
- Loose floor covering
- A step in an unexpected place
- Distracting views.

Contact the local building authority for building codes regarding staircases to ensure that your building is in compliance.

Outdoors

Walkways
The most important characteristic of walkways is that they must be smooth without being slippery. Walkways may crack due to settling surfaces, storm damage, or the action of tree roots.

Walkways should be level wherever possible, well-maintained and free of debris. Walkways should also be pitched enough to provide proper drainage so that puddles and ice do not collect on them, and be properly illuminated at night. In the event you find that your external walkways are too slippery, chemical treatments and other coatings or mechanical treatments that create texture are available that will increase the slip resistance of these surfaces.

Ramps
Slip, trip, and fall accidents commonly occur on ramps, which are used to allow access by those unable to easily negotiate steps. Ramps may need higher levels of slip resistance due to environmental factors and the increased slope. This can be accomplished by use of brushed concrete, cross cleats (cuts by a concrete saw), friction strips, and nonslip paints or coatings. Generally, wheelchairs can navigate a slope of 7° or less without excessive effort. Ramps with a slope of less than 4° may be difficult to detect visually and can surprise a pedestrian, especially when handrails are absent.

Parking Lots
Slip, trip, and fall exposures can be mitigated in parking lots by making sure that:

- The surface is regular and smooth
- Speed bumps, which are tripping hazards, are eliminated. (If speed bumps are necessary, make sure they are properly designed—see next section)
- Safe, conspicuously marked access routes are provided for pedestrians
- Illumination is adequate

Parking lots should be included in any formal slip, trip and fall inspection program, to determine condition and schedule maintenance. An adequate budget should be maintained for parking lot repair and maintenance.

In an effort to go green, some lending institutions are installing pervious paving to allow water to penetrate into the ground, thus reducing the amount of water runoff. Pervious paving can create a tripping hazard so care should be taken to ensure you are not replacing one hazard with another. As with other green building options, you want to make sure adding these features doesn't create additional risk in terms of slips and falls.

Speed Bumps and Wheel Stops

Speed bumps, if necessary, should be located in areas that are not in the direct walkway of pedestrians. They should be painted a bright color (such as safety yellow) with slip-resistant paints. They should be designed so that a flat, three-foot walking area is provided at both ends.

Wheel stops present tripping hazards, usually because they are out of sight at the time the driver exits the vehicle. When possible, the use of wheel stops should be eliminated by good parking lot design and engineering. They are a particular hazard to individuals with disabilities. If they must be used, paint them a bright color, and also ensure that they are positioned in such a way to prevent parked vehicles from extending into the pedestrian walkway.

Conducting a Hazard Analysis

Taking control of slip, trip, and fall hazards, like any other systemic problem, requires a methodical and coordinated process. Fully document the process to ensure management control and to demonstrate management's commitment to eliminating this hazard.

Having a well-managed slip, trip, and fall prevention program makes good business sense

A good starting point in a safety program is to conduct a complete hazard analysis of the workplace. The elements of a hazard analysis include:

- Identifying the type of floor in each area to ensure that it is compatible with the environment in which it resides
- Reviewing maintenance procedures for floors, staircases, walkways, parking areas, etc.
- Observing the overall physical condition of walking surfaces to ensure they are not damaged by routine use or foundation settlement
- Identifying changes in levels of walk surfaces or in the type of flooring materials along walkways
- Analyzing prior claim and incident reports. These may contain actual accidents, near misses, and/or maintenance records that point to areas that have already resulted in injuries

The information derived from the hazard analysis can provide the information needed to develop the following ongoing accident- prevention activities.

Self Inspections
It can be valuable to use checklists, such as the sample checklist included in this guide, which help to identify slip, trip, and fall hazards. A good, detailed checklist not only helps identify hazards but also translates the hazards into work orders that can be quickly corrected. Make sure a knowledgeable person is responsible for conducting detailed inspections and providing the results to management for review and follow-up.

To augment these inspections, conduct informal daily walk-through inspections to identify serious hazards, such as lighting failures, poor housekeeping practices, damage to walking surfaces, furnishings that may have been moved, etc., that can pop up between formal inspections.

Maintenance Protocol
All walking surfaces should be maintained on a regular schedule. It is important, however, to realize that maintenance procedures themselves can cause slip, trip, and fall accidents. For example, a poorly trained custodian may not know that specific types of flooring require specific types of care, as discussed in the previous section on floor maintenance. Continually monitor maintenance procedures followed by janitorial staff, whether they are lending institution personnel, contract personnel, or personnel employed by building management.

Inclement Weather Precautions
Develop precautions and assign them to specific employees to enact under certain poor weather conditions. One important precaution is the placement of walk-off mats at all entrance doors.

The Carpet & Rug Institute's "Carpet Maintenance Guidelines" states that extending mats 6' - 15' inside the entrance will trap 80% of the soil and moisture from the first five or 6 steps. As a rule of thumb, footprints or water prints should not be seen on the floor beyond the last mat. Mats should be secure and in good condition with no curling or buckling at the edges. Any mat that is not in good condition or does not lay flat should immediately be removed from service. During heavy rainstorms, they should be inspected regularly to verify they haven't become saturated, thus rendering them ineffective.

Mats are made of a variety of materials, including rubber, polypropylene, and carpet to help remove water and dirt from shoes. The color of the mats should contrast with the color of the flooring, and mat edges should taper down to the floor for a smooth transition to the floor's surface. Under severe conditions, consider posting a janitorial staff member at each entrance to warn employees and customers entering the area about the slipping hazard and to manually mop any excess water that may accumulate.

Employee Training
Train employees to identify and report all slip, trip, and fall hazards so the hazards can quickly be corrected. Due to constant change in the workplace environment, this is an important element of the program.

Also, to avoid employee slip, trip and fall accidents, educate employees on the role that shoe selection plays, and encourage them to wear shoes that are compatible with the flooring surfaces in their areas.

Monitoring Results
Finally, monitor the results of the safety program. Review audit procedures for all of the activities noted above to ensure they are properly and consistently followed. Furthermore, implement and regularly review a thorough accident and incident investigation procedure to ensure that the actions being taken are indeed preventing slips and falls.

Conclusion
Due to the fact that severe slip, trip, and fall accidents occur frequently at many lending institutions, it is reasonable to suggest that it may be only a matter of time until such an accident occurs at your location without the proper precautions being taken. An effective slip, trip and fall prevention program should incorporate Hazard Identification; Hazard Mitigation Measures; Employee Training; Incident Reporting/Investigation; Maintenance and Housekeeping; Signage/Warnings; and Routine Program Evaluation. The elements of the program will vary based on the characteristics of your location. Given the potential for injury and liability, and the comparatively low cost of implementing a slip, trip, and fall prevention program, having a well-managed program makes good business sense.

Sample Checklist
A good, detailed walking hazard checklist can help identify hazards and then translate them into work orders that can have the hazards quickly corrected. The following sample is offered to help illustrate how a checklist might look and be used to minimize slip, trip, and fall incidents; the actual checklist you use should be tailored to your particular facility. Follow the checklist routinely, perhaps weekly. Any "No" answer should have an entry in the "Action/Comment" column.

Requirement	Yes	No	N/A	Action/Comment
Flooring				
Are flooring surfaces inspected regularly?				
Are flawed flooring surfaces promptly repaired or replaced?				
Are caution signs posted for all wet floors? (Are signs selected with large open bottoms to cover hazards, or are cones used to mark off hazardous areas?)				
Are the floor signs used above knee height, visible from 360 degrees, and located near areas that are subject to wetness?				
Is loose debris swept up?				
Are tracked-in water and spilled liquids mopped up?				
Is electrical wiring that runs across the floor secured with tape?				
Are refrigerators/ice machines checked for leaks on a daily basis and repaired if needed?				
Are all physical hazards, including inclines and drop-offs, marked using yellow safety paint?				
Are aisles clear?				
Is the carpet plain, not “busy”?				
Are all cover plates flush with the surrounding flooring?				
Are restroom floors made of non-skid material?				
Are paper towel and soap dispensers installed close to sinks so that people don’t drip water from their hands on the way to the dispenser?				
Stairs and Ramps				
Are staircases, ramps, and landings well- illuminated?				
Are steps are uniform and meet the design codes?				
Are handrails provided?				
Are landings level and well designed?				
Are landings and staircases free of debris and well maintained?				
Are ramp surfaces paved with non-slip material?				
Are ramps equipped with handrails?				
Are handrails 3ft above the walking surface particularly on steep ramps?				
Are ramps at least 3ft wide?				
Are ramp landings provided at points of turning, entry & exit?				

Requirement	Yes	No	N/A	Action/Comment
Cleaning Chemicals and Floor Finishes				
Are “high-risk” areas maintained using slip-resistant cleaners?				
Is non-skid floor wax used and applied in a thin coating?				
Is non-skid flooring and deck paint used where appropriate?				
Are maintenance employees trained to apply floor-finishing products correctly?				
Are cleaning materials and methods compatible with the flooring manufactures requirements?				
Matting				
Are absorbent walk-off mats used at all doorways that lead to the outside?				
Are the mats changed frequently during inclement weather?				
Are mats in good condition?				
Are absorbent walk-off mats used at all doorways that lead to the outside?				
Are the mats changed frequently during inclement weather?				
Are mats in good condition?				
Do all the mats lie flat?				
Are thick mats constructed with beveled edges to minimize tripping?				
Are mats used with a nonslip backing?				
Are additional mats stored on site so that worn and wet mats can be replaced?				
Parking Lots and Sidewalks				
Are remedial controls in place during winter months (where applicable) for ice melt and hand shovel?				
Are safe access routes well-marked?				
Are these areas free of ice, snow, and grease?				
Are receiving areas, ramps, stairs, walkways, and drive-up windows and ATMs in good condition and free of debris or contaminants (to include snow and ice)?”				
Are parking lot dividers, curbs, and speed bumps well-marked?				
Are walking surfaces subject to wet or icy conditions coated with a rough, textured finish?				
Are automatic lawn sprinkler heads oriented so excess water doesn’t puddle on walkways?				

Requirement	Yes	No	N/A	Action/Comment
Parking Lots and Sidewalks				
Are speed bumps painted using non-skid paints that contrast with the driving surfaces?				
Are wheel stops situated so they do not permit vehicles to extend into walkways and do not present a tripping hazard to pedestrians?				
Are parking lots regularly checked for potholes, cracks, and depressions, and are they patched on a regular basis?				
Are islands identified with signs?				
Are catch basins cleaned on a regular schedule?				
Is snow removal done before employees report to work?				
Are curbs painted with contrasting colors?				
Does maintenance staff regularly remove leaves and debris?				
Have slippery spots caused by oil or grease been treated with absorbent materials and cleaned up?				
Exterior lighting				
Are exterior lighting fixtures checked at night to identify bulbs that need to be replaced?				
Are all exterior walkways adequately illuminated?				
Are all parking lots illuminated to levels required by local or accepted standards?				
Housekeeping Procedures				
Are all passageways, storerooms, restrooms, and customer service areas kept clean, sanitary, orderly, dry, and free of protrusions (such as nails or splinters)?				
Is a rigid cleaning and mopping schedule in place to keep floors clean and dry?				
Are “Use Caution: Wet Floor” signs used when floors are being mopped?				
Have floor cleaning solutions been selected based on their compatibility with the floor surface and are applied according to manufacturer's instructions?				
Does someone keep a log of all cleanings/repairs? (A log should record products used, when and by whom tasks are performed, surfaces cleaned/repaired, and cleaning/repair procedures used.)				
Are mats used with a nonslip backing?				

Requirement	Yes	No	N/A	Action/Comment
Employee Training				
Are employees trained about slip, trip, and fall prevention and offered ongoing training and education as necessary?				
Are maintenance employees provided with product usage training?				
Do trainees sign a form acknowledging that they received and understand training?				
Are written slip/trip/fall-prevention and accident-handling policies posted on employee bulletin boards?				
Are employees trained to provide customers or employees who do slip/trip/fall with prompt attention, which may include securing or directing them to proper medical treatment?				
Miscellaneous				
Are awnings or blinds used to block the sun's rays in areas where sun glare inhibits a person's ability to see walking surfaces or obstacles?				
Are file drawers closed when not in use?				
Are there enough electrical outlets to eliminate the use of extension cords?				
Are electrical outlets installed where they do not pose a tripping hazard?				

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