



# Slip, Trip and Fall Prevention Guide

This guide describes some common slip, trip and fall hazards and discusses measures organizations can take to reduce the risk of same-level slips, trips and falls on their premises.



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## Housekeeping

**PROBLEM:** Cluttered work areas and debris left on walking surfaces can lead to slip or trip incidents.



**PROBLEM:** Objects sit within or block a walking path or aisle.



**PROBLEM:** Step stools are not available, so people tend to stand on chairs or other unstable objects.



**SOLUTION:** Create a designated walking area and mark it off with distinct tape or paint. Review housekeeping procedures and emphasize the importance of keeping walking surfaces free of debris.



**SOLUTION:** Remove the objects to make a clear walking path.



**SOLUTION:** Make step stools and/or stepladders available and instruct employees on how to use them. Type 1 or better stools and ladders that safely support 250 lbs should be used.



## Housekeeping

**PROBLEM:** Sawdust on smooth concrete creates a slippery surface.



**SOLUTION:** Use grit strips and walk-off mats for these areas and sweep floors frequently.



**PROBLEM:** Power cords are routed across walkways, creating a trip hazard.



**SOLUTION:** Additional wall outlets may need to be installed to eliminate the need to run cords along the floor. Otherwise, use high-visibility cord covers. Tie up cords that dangle to prevent entanglement.



## Weather

**PROBLEM:** Parking lots and sidewalks are not adequately cleared of snow and ice during winter months, increasing the possibility of a slip or fall.



**PROBLEM:** Thin layers of ice or black ice form when melted snow refreezes after sundown.



**PROBLEM:** The downspout discharge is directed across walking surfaces, contributing to wet and/or icy conditions.



**SOLUTION:** Clear parking lots and sidewalks before employees arrive for work and monitor them throughout the day during inclement weather. Place shovels near doorways to facilitate shoveling as needed throughout the day.



**SOLUTION:** Perform walkway audits after the snow melts. Pile snow to reduce melting into walkways. Apply coarse sand or oil absorbent on wet areas and direct downspouts away from walkways.



**SOLUTION:** Channel the runoff underneath a walkway.



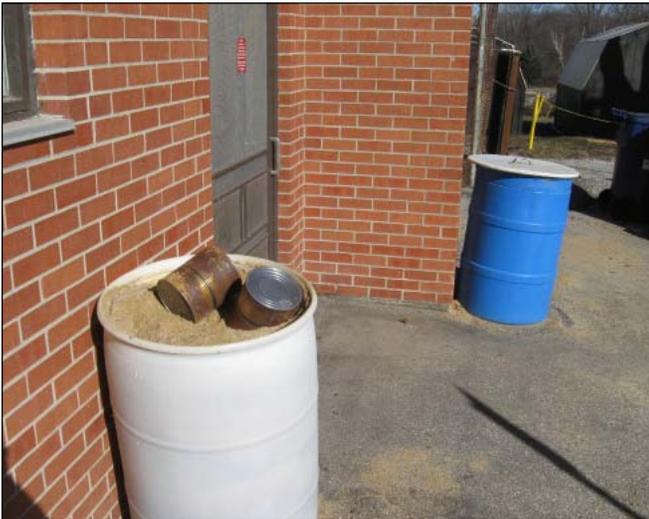
**PROBLEM:** The proper type or amount of ice melt is not used on sidewalks and parking lots, increasing the risk of a slip or fall.



**SOLUTION:** Check to make sure the correct product and amount are applied to sidewalks and parking lots according to the manufacturer's usage instructions. Some products, such as those with high concentrations of calcium chloride, can leave an oily residue that can be tracked throughout the facility, creating a slippery surface. Make containers of snow melt or traction aids like kitty litter or oil absorbent available so employees can spot apply as needed.

**TIPS FOR SELECTION AND USE OF ICE MELT:**

- Avoid the trap of using too much. Products that include colorant can help indicate how much to use, preventing overapplication.
- The slush created by ice melt should be pushed off the sidewalk as soon as possible.
- Magnesium chloride products may have a harmful effect on concrete. Consider potassium chloride blends instead.
- Liquid ice melt is not effective when applied to existing snow/ice. It should be used primarily as a pretreatment in advance of precipitation.
- Do not use ice melt on concrete that is less than one year old.



## Stairs

**PROBLEM:** Wooden or aluminum ramps can be slippery when wet or snowy.



**SOLUTION:** Install traction strips on the walking surfaces of ramps, or apply another slip-resistant treatment such as lacquer and mineral aggregate. Consider installing slip-resistant resin ramps when planning new ramp construction.



**PROBLEM:** People often shake umbrellas after coming into a building out of the rain, which may cause a slip hazard.



**SOLUTION:** To help reduce water puddles inside the building, provide umbrella bags for employees and visitors.



# Stairs

**PROBLEM:** Stairs that have no handrails or insufficient handrails can increase the risk of a trip or fall.



**PROBLEM:** Stair steps with noncontrasting stair tread can cause trips and falls.



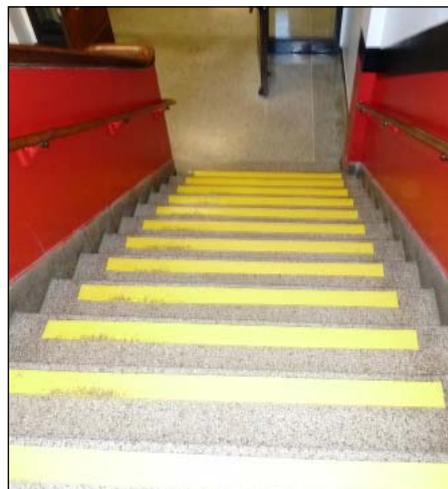
**PROBLEM:** Chipped or deteriorated stairs create a trip or fall hazard.



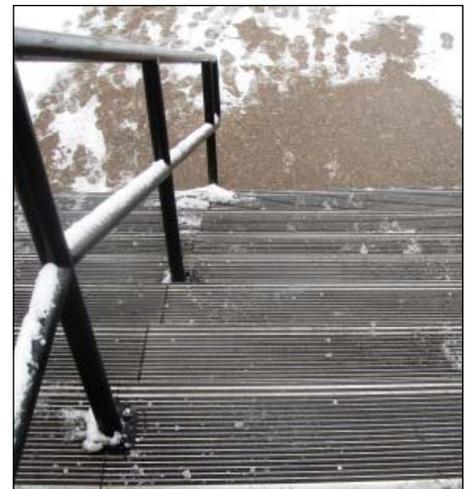
**SOLUTION:** Install approved handrails on at least one side of steps with four or more stairs. Handrail construction should be rounded to enable a firm grip, which helps prevent falls. Mount handrails so there is at least a 3-in clearance between the handrail and wall.



**SOLUTION:** Use visibly contrasting edge treatments on stair steps, especially on the last step of a flight of stairs. Nonslip nosing inserts or friction strips enhance visibility of steps.



**SOLUTION:** Repair or replace deteriorated stairs. Slip-resistant tread covers can easily be retrofitted to existing stairs.



## Sidewalks, Curbs and Parking Lots

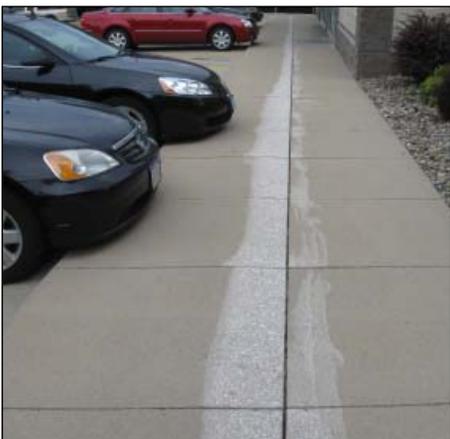
**PROBLEM:** Sidewalk sections that change in elevation more than 1/2-in create a tripping hazard, but even a 1/4-in elevation can cause trips, especially among the elderly.



**PROBLEM:** Vehicles that overlap the sidewalk can force pedestrians to walk on adjacent surfaces, which may be dangerously uneven.



**SOLUTION:** Repair or replace concrete to provide a smooth transition between sections. Grinding and mudjacking are typically more economical than replacement. Provide warning markings or cones until permanent repairs can be made.



**SOLUTION:** Install brightly marked tire stops where parked vehicles can potentially reduce the walking path to less than 3-ft wide.



## Sidewalks, Curbs and Parking Lots

**PROBLEM:** Landscaping borders and raised edges along walkways can cause trips, especially when they are difficult to see or are located in areas where shortcuts are anticipated.



**PROBLEM:** Bushes, shrubs and other foreign objects that infringe upon walking paths and create possible trip or slip hazards.



**SOLUTION:** Adjust landscaping practices so borders are not necessary, or place obstacles in such a way that they prevent shortcuts.



**SOLUTION:** Trim or otherwise contain landscape plantings to minimize their infringement on walkways. Keep sidewalks clear of all foreign objects such as pebbles and gravel.



## Sidewalks, Curbs and Parking Lots

**PROBLEM:** Potholes in concrete not only create tripping hazards but can also collect water, which can freeze and lead to a slip and fall accident.



**SOLUTION:** Perform routine inspections and repair potholes as soon as possible. Gravel may be added as a temporary solution until more permanent repairs can be made.

**PROBLEM:** Gravel parking lots with inadequate gravel thickness can lead to pooling water. During winter months, standing water can freeze and create a slip hazard.



**SOLUTION:** Apply additional gravel to high-traffic areas and areas with thin gravel layers.



## Sidewalks, Curbs and Parking Lots

**PROBLEM:** Unpainted curbs or curb ramps along high-traffic sidewalks and other high-traffic areas may be difficult to see, creating a trip hazard.



**SOLUTION:** Paint curbs and curb ramps with slip-resistant yellow paint. In addition, consider reworking curb areas by installing a curb ramp with flared sides and contrasting color.



## Sidewalks, Curbs and Parking Lots

**PROBLEM:** Gaps between sidewalk sections can catch heels, creating a tripping hazard. In addition, large gaps collect water, which can aggravate frost heaving.



**SOLUTION:** Clean large cracks and fill them with appropriate caulking material. In some cases, rope caulking may be necessary to use as a base to keep the filler material in place.

**PROBLEM:** Vehicles parked in no-parking areas may obstruct access to sidewalks and stairs, creating potential trip hazards.



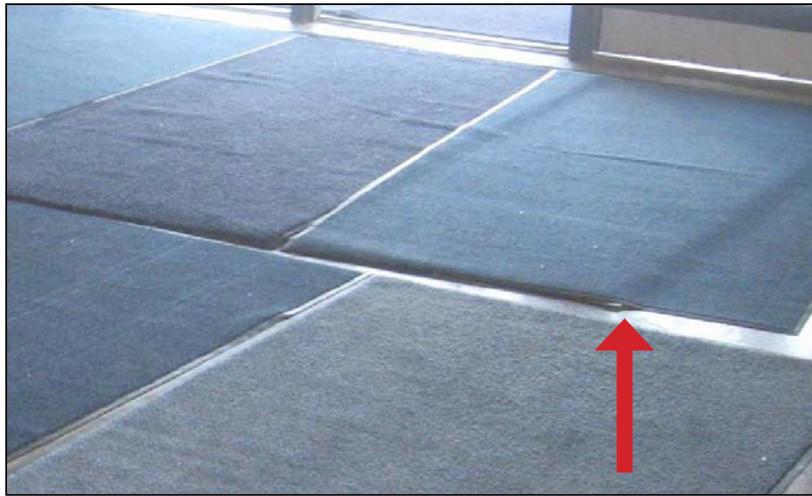
**SOLUTION:** Check to make sure pavement markings and signage are adequate and enforce parking rules.



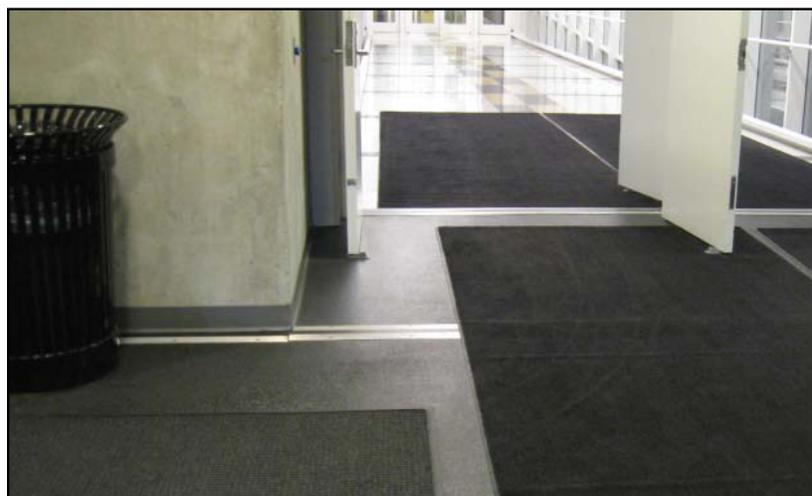
## Mats

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**PROBLEM:** Overlapping entrance mats create raised humps that can cause people to trip, especially the elderly, who may have more difficulty seeing the humps.



**SOLUTION:** Position mats so they create a smooth, level walking surface.



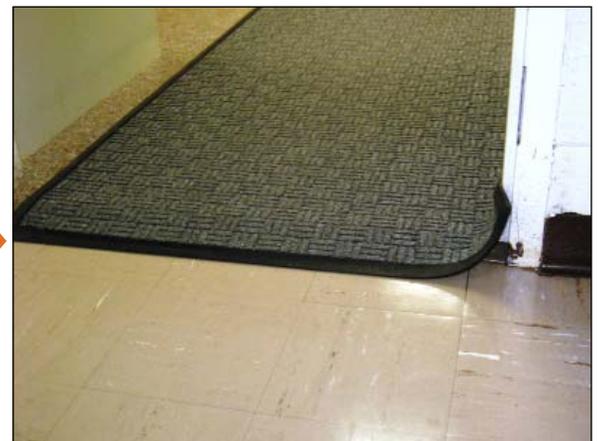
## Mats

**PROBLEM:** As entrance mats become soiled or saturated with water, they lose their effectiveness and allow debris to be tracked into the building.



**SOLUTION:** Review housekeeping procedures and emphasize the importance of inspecting and cleaning mats on a regular basis. Use extractors on large mats during inclement weather to remove excess moisture.

**PROBLEM:** Some mats tend to slide or shift out of position when walked on, which can create a tripping hazard. Mats next to doorways are of particular concern.



**SOLUTION:** Inspect mats and reposition as necessary. When purchasing new mats, make sure they have slip-resistant backings. Consider mats that are certified to meet the National Floor Safety Institute standard for high-traction mats (NFSI B101-C).

## Mats

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**PROBLEM:** Mats that are worn smooth or are too thin to absorb significant moisture do little good. Other problems with mats can include curled edges and broken edges.



**SOLUTION:** Inspect mats regularly and replace when they are worn or damaged.



## Mats

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**PROBLEM:** Areas around drinking fountains and sinks don't have the correct types of mats to prevent water pooling, increasing the chance of a slip or fall.



**SOLUTION:** Set up water-absorbing mats in these areas.



## Other Issues

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**PROBLEM:** People often wear inadequate footwear for the task being performed.



**SOLUTION:** Train employees to wear slip-resistant footwear specifically designed for the work environment. Open heels, spiked heels and flip flops should not be allowed. Since most people walk heel first, the heel area is usually the first area to wear out and should be inspected regularly.

Employees assigned to work in routinely wet slippery areas (e.g., kitchens) should wear slip-resistant, rubber-soled footwear.



## Other Issues

**PROBLEM:** Water from fountains can shoot onto the floor, causing pooled water, which is a slip hazard.



**SOLUTION:** Inspect drinking fountains to help ensure the water stream does not go beyond the basin. Install slip-resistant mats along the base of the drinking fountain.

**PROBLEM:** Wet floor signs are left up too long, in the way of traffic or are difficult to see.



**SOLUTION:** Use wet floor signs to warn pedestrians of wet floors and remove them when the floor has dried. If left up continually, people eventually disregard them. Place wet floor signs in open areas rather than the middle of doorways or walkways.

## Floor Safety Program

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1. When installing or replacing floors, choose flooring that provides adequate traction. Ask for documentation from suppliers and perform friction tests before purchasing.
2. Check for slip and fall hazards frequently and conduct formal walking surface hazard audits at least annually. Conduct night audits to check walking surface visibility and lighting levels. Measure floor traction with a slip meter and adjust maintenance procedures accordingly.
3. Establish a floor maintenance procedure that indicates the appropriate cleaning chemicals and methods for various types of floors. Consider using floor treatments designed to increase traction.
4. Establish a formal snow and ice removal policy. Make sure you are using the correct type of snow or ice melt and that it's readily available when and where needed.
5. Implement a mat safety program and define which types of mats are used when and where. Perform regular mat inspection and replace worn or damaged mats.
6. Establish a footwear policy and require that slip-resistant shoes be worn, especially in work areas that are typically wet or slippery. High-traction overshoes or cleats should be available for those working outdoors in snowy or icy conditions.
7. Provide other slip prevention tools such as wet floor signs, spill kits and oil absorbent as needed.



## Learn More

This publication does not list every risk that may be encountered. Management of every organization should have all its areas inspected for slip, trip and fall hazards and develop a safety policy catered to the organization's needs. To access additional online resources that can help prevent slips, trips and falls, go to [www.emcins.com](http://www.emcins.com) and select **Loss Control**.

