

EMPLOYEE

SLIP, TRIP AND FALL

Prevention Handbook

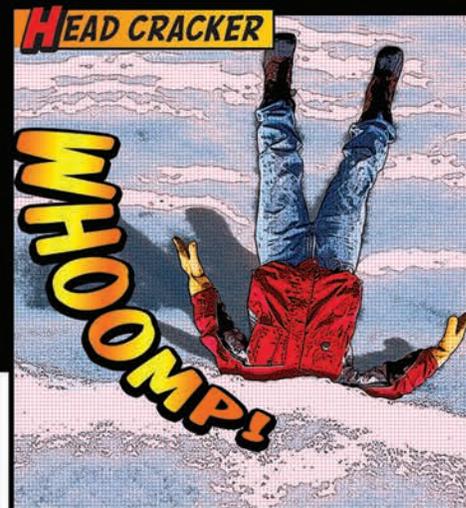
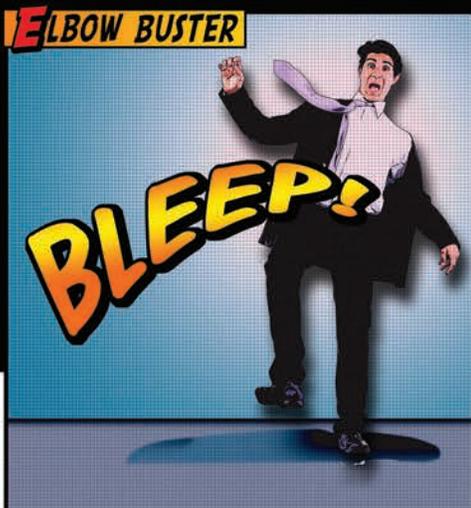
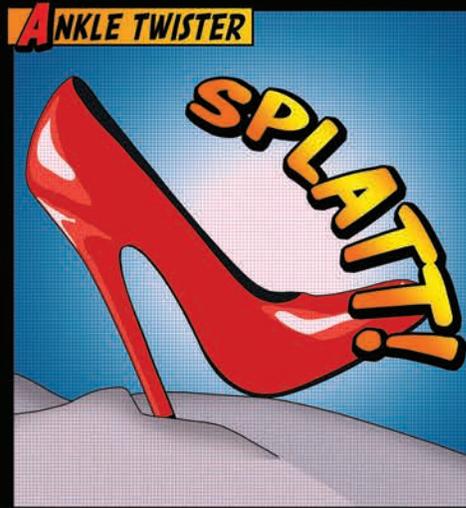


Table of Contents

Overview	1
Weather-related Hazards and Prevention Strategies	2
Walking Surface Irregularities	4
Stairs	5
Carpet, Cords and More	6
Wet Floors	7
Vehicles and Equipment	8
Shop Safety	9
Elevated Work	10
Personal Health	11
Resources	11

This handbook is based on the Slip, Trip & Fall Handbook published by the Iowa Municipalities Workers' Compensation Association. Sections are reprinted with permission.

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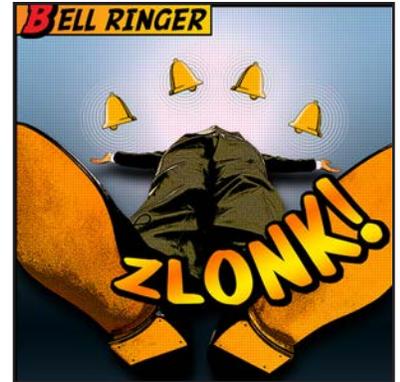
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Employee Slips, Trips and Falls: An Overview

Definitions

The National Safety Council provides the following definitions.

- Slips:** Where there is too little friction or traction between footwear and walking surface that cause sudden imbalance.
- Trips:** When a person's foot collides (strikes, hits) an object causing the individual to lose his or her balance and fall.



Prevalence and Costs

NATIONAL STATISTICS:

- 26 percent of nonfatal workplace injuries are due to slips, trips and falls. (Bureau of Labor Statistics)
- 16 percent of fatal workplace injuries are due to slips, trips and falls; 13 percent are due to falls from a higher level to a lower level. (Bureau of Labor Statistics)
- Compensation and medical costs associated with employee fall accidents totaled \$15.57 billion in 2016 (most recent year for which data is available from Liberty Mutual Research Institute for Safety).
- Nationwide the average cost of a workers' compensation lost time claim for a slip and fall injury is \$45,606. (National Safety Council)
- The primary cause of lost workdays is slips and falls. (National Floor Safety Institute)

MCIT STATISTICS:

- On average, members of Minnesota Counties Intergovernmental Trust (MCIT) report 313 employee slip and fall injuries every year.
- Slips and falls account for about 23 percent of reported workers' compensation claims and 32 percent of costs.
- These claims average \$2.4 million annually.

Injuries Can Be Prevented

Slip, trip and fall accidents can happen on walking surfaces in any season, but are more frequent in the winter due to ongoing icy and wet conditions. In the past several years, injuries due to slip and fall incidents are in the top five of the most frequently reported workers' compensation claims made by MCIT member employees. In addition, visitors can injure themselves on the same walking surfaces. These injuries can range from simple bruises to broken bones, dislocated joints and severe head and back injuries.

Given the prevalent number and significant costs of claims due to slips, trips and falls, MCIT has developed the Step Wisely program to assist members in developing and implementing strategies to prevent slip, trip and fall injuries. Although the emphasis of this information is to protect employees from work-related injuries, much of this information can also be used to prevent similar incidents involving the public visiting member buildings and facilities.

Weather-related Hazards and Prevention Strategies

Minnesota has diverse weather: ice and snow in winter, frost and sleet in spring and fall, and rain in summer. Each of these weather-related variables represents a potential source for slips and falls.

Ice, snow, frost, sleet and rain can cause a reduction in traction between footwear and a walking surface. A reduction in traction can cause the foot to slip in an unintended direction that can result in a fall.

Traction is measured in terms of the coefficient of friction (COF). It takes a COF of 0.4 to 0.5 or better to have excellent traction. Surfaces covered in ice or melting snow can have a COF as low as 0.1 when proper footwear is not worn. Leather-soled shoes (e.g., dress shoes) when damp and slightly warm create a film of moisture between the shoe and the surface. The moisture greatly decreases the COF and increases the chances of hydroplaning and slipping.

A number of sound strategies help reduce weather-related slips and falls. Four key components follow.

1. Footwear

Footwear suitable to weather is a key factor in preventing slip and fall accidents. Properly selected footwear can significantly increase the COF in a given situation and decrease slip potential. Encouraging employees to wear suitable footwear for the conditions is a good practice. Employers should be aware, however, that requiring employees to wear certain types of footwear may mean that the employer must bear the cost of providing that footwear.

For people working outside, selecting a good work boot with a slip-resistant sole is a good place to start. A local vendor can provide valuable information on the type of sole appropriate to the exposures employees might encounter. For example, the sole needed to deal with oily, wet floors might be different from soles needed to deal with snow. In some extreme cases, regular slip-resistant soles may need to be augmented with slip-on cleats or YakTrax™. Selecting appropriate add-ons will depend on the exposure and tasks being performed.

For people working inside but having to venture outside intermittently, a few strategies can be followed:

1. Wear rubber slip-ons to provide traction to leather-soled shoes. The slip-ons can also protect shoes against moisture.
2. When slip-ons will not work, such as in the case of high heels, employees could wear weather appropriate shoes outside and change into a separate pair of shoes for inside the office.

One item to consider is to provide an area for employees to store their overshoes or boots when they are not being worn.

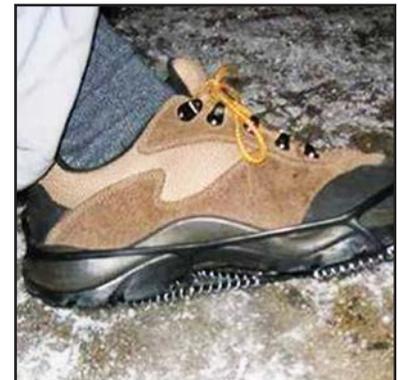
2. Free Hands

When navigating sidewalks, parking lots or stairs in slick conditions, it is important to keep hands as free as possible to help maintain balance and hold rails.

Carrying materials in shoulder bags or in carts helps keep hands free and allows a clear view of the path ahead. Employers should consider providing employees with shoulder bags or carts when their jobs require them to carry materials to and from work.



Nonslip soled shoe.



Slip-on cleats provide traction on snow and ice.



Using a cart helps keep a clear view ahead.

3. Take Your Time

A major factor in causing weather-related slips and falls is walking too fast for the conditions. Even with proper footwear, rushing can cause falls.

The best strategy is for employees to allow adequate travel time to get to where they are going. Employers should remind employees of this and that being late is better than rushing and not getting there at all!

4. Maintenance of Walkways

Employers can help diminish slip and fall potential by working with custodial staff to develop and implement a maintenance schedule to ensure that snow and ice are removed from walkways as soon as possible. Then, use intermittent inspections to safeguard against refreezing or new accumulation.

The inspection process should also be used to monitor slick areas caused by rain runoff and frost accumulation. Runoff from drains and downspouts that pools in walkways and near entrances is dangerous. It is best to reroute runoff away from these areas.

Another strategy is for employers to encourage employees to report hazards they find properly. It is important to have a reporting procedure and that employees know about it.

Keeping a log book of when maintenance is performed can assist with staying on schedule, maintaining compliance with Occupational Safety and Health Administration (OSHA) standards, and with defense in case of a third-party liability injury claim. Note in the log the date, time, location and any actions taken. See below for a log book example.



Clear snow and ice as soon as possible from walkways.



Unlike this example, downspouts should drain away from walkways.

Ground and Building Maintenance Log

DATE	TIME	LOCATION	DESCRIPTION/ACTION



The runoff above poses a slipping hazard.

Walking Surface Irregularities

People typically slip, trip and fall because the walkway conditions they encounter are different from what they expect. Therefore, small defects in the walking surface can become a big nuisance.

Changes in Elevation

Abrupt changes in elevation can catch toes and cause falls. Common hazards are:

- heaved sidewalks or other pavement.
- potholes.
- cracked pavement.
- cracked or missing tiles.

To manage these types of hazards, building owners should periodically inspect sidewalks, parking lots and floors. Then, develop controls, depending on risk, such as:

- marking hazards (with bright paint for example).
- temporarily closing the walkway.
- barricading the area.

As soon as is practical, repairs should be made to repair the hazard.

Camouflaged Hazards

If changes in elevation are not readily recognized by people, they are likely to trip or lose their balance and fall. To prevent this, facility managers should make hazards noticeable with visual cues. Two examples of camouflaged trip and fall hazards follow.

1. Camouflaged parking curb: Painting parking curbs contrasting colors to the pavement increases the likelihood that people will see curbs.

2. Camouflaged steps: Add visual cues with handrails, potted plants, contrasting color between stair tread and lower level floor.



Before: The uneven sidewalk creates a tripping hazard.



After: The sidewalk section was repoured and evened.



Cones draw attention to dips in the sidewalk until repairs can be made.



Bright paint identifies large cracks.



The blue parking curb is hardly noticeable.



Contrasting parking curbs help prevent tripping.



Before: The steps and floor blend together.



After: Railings help people identify the change in elevation, as well as providing a mechanism to maintain balance when using the steps.

Stairs

The basic task of climbing and descending stairs accounts for numerous falls each year that result in injury. This section identifies the causes associated with stairwell falls and what strategies can be used to prevent them.

Using Stairs Safely

The primary cause of stairwell slips and falls is the loss of balance. Here are some points employers should teach employees about when taking the stairs:

- Slow down going up or down stairs. Ensure a firm footing on each tread before taking the next step.
- Use the railing to help maintain balance.
- Keep eyes on the path. Distractions can cause missteps.
- Do not carry items in arms that obstruct the view of the steps. Not only can people misstep, but they will be unable to use the railing to catch themselves.
- Wear proper footwear. High heels, flip flops and slides can impede balance while climbing stairs.

Stair Construction

The rise (height) and run (depth) of stairs should be uniform for each step in a flight of stairs. An irregularity from one step to the next is unexpected and can cause a person to lose his or her balance and fall. Stairways must meet building codes and OSHA standards for rise and run of steps.

Also facility managers should make sure that any set of stairs with three treads or more have properly mounted handrails. Consult with the National Fire Protection Association Life Safety Code or the local building official to determine the handrail requirements for stairwells.

Stair Maintenance

Proper maintenance of stairs is also important for slip and fall prevention. Accumulation of ice, snow and excessive sand on outdoor steps can reduce proper footing. Facility managers should frequently inspect stairs and clear away new accumulations as soon as practical.

Slick wax, unattached or rolled carpet and items stored on stairs can be trip hazards in offices or shops. Steps should be inspected frequently to ensure these conditions do not exist. High-traction tape may be used to enhance the coefficient of friction on treads. Specialty nonslip wax and other edgings are also viable options to improve traction on stairs.

Stairwells should be well-lit to ensure good visibility. Burnt out bulbs or underilluminated fixtures should be replaced immediately.



Carrying large loads can make it difficult to see steps, increasing the chance of falling.



Unevenly spaced stairs are unexpected and can cause people to lose their balance.



Items stored on stairs become a tripping hazard.



Worn traction tape does nothing to help prevent slips on slick stairs. Replace tape as it wears out.

Carpet, Cords and More

In office settings, some of the more common contributing factors to slip and fall accidents are unsecured carpeting, curled rugs, cords strewn in walkways and under desks, and drawers left open.

Carpet and Rugs

Carpets and rugs should be inspected frequently to ensure that there are no rolls that create trip hazards. If rolls exist, the carpet should be restretched or replaced. Entry rugs should be adjusted to prevent rolls and the ends secured.

Ensure that entry rugs are of a type and size to capture excess moisture brought in from outside. Higher traffic areas may require rugs with greater holding capacity.

Cords

As more electronic equipment is used in offices, more power cords are present. Newer buildings have been designed to accommodate the increase in cords and wiring; however, older buildings with fewer outlets and no means to convey wiring in the walls or ceiling may have to run cords and wires on the floor.

To address this exposure, bridges should be used to cover cords and wiring across floors. The bridges should lie flat on the floor or be secured with tape.

Cords and wires also represent a trip hazard when they dangle from the desktop to the floor. Employees' feet can become tangled in unrestricted wires and cause employees to fall when they attempt to get up from their desks. Cords and wires should be placed in cord harnesses and secured to the desk to prevent dangling.

Filing

Another cause of office trips and falls are low-level filing drawers left open. Not only can these cause falls, but the sharp edges can be a source of severe cuts. Employers should remind employees to close all drawers that are not in immediate use.

Other Items

Other items on the floor, such as papers, backpacks, boxes, briefcases or shoes, can also create slip or trip hazards. Items should be stored away from walkways or off of the floor.

Encourage Awareness

The most important strategy for slip, trip and fall prevention in the office environment is to train employees to maintain awareness of their surroundings. Keep eyes on the path ahead and look for potential hazards. Encourage employees to report hazards that they cannot remedy themselves.



Curled rugs can catch toes.



Feet can get tangled in power cords.



Cover power cords with a bridge when they must cross pathways.



Always close drawers when not in use, as people can trip on them and get injured.

Wet Floors

Slips and falls can occur anywhere when the potential of reduced traction exists. One element that contributes significantly to reduced traction is the presence of moisture on floors. Wet floors can occur in office buildings, shops, nursing homes, kitchens and any other location with impermeable flooring such as tile, cement and marble.

There are several reasons that moisture occurs in these locations:

- leaking from roof or plumbing
- melting snow or ice carried in by footwear
- housekeeping duties such as mopping or washing
- melting snow from equipment being serviced in shops
- spilling of employees' drinks and lunches
- splashing from sinks and drinking fountains



Warning signs near wet floors alert people to be careful while walking in the area.

Take Action

To reduce or eliminate moisture in walkways, employers should train staff about these commonsense strategies:

- Practice good housekeeping by immediately mopping up excess moisture.
- When cleaning wet floors, place warning signs in travel portions of walkways.
- Fix leaks immediately.
- Place carpets at building entrances to catch rain water and melting snow and ice from footwear. Change out carpets frequently to prevent oversaturation.
- Ventilate rooms with high humidity, such as laundry rooms and kitchens.
- Provide slip-resistant mats in front of sinks, dishwashers and washer/dryers to keep water drips from accumulating.
- When possible, use traction tape, textured paint or nonslip floor treatment in environments with heavy moisture potential.
- Wear proper slip-resistant footwear.
- Take time when walking in areas that are generally wet, such as maintenance bays.
- Take corrective action immediately or report problems properly when found.

Entering and Exiting Vehicles and Equipment

Although getting in and out of a vehicle seems like an innocuous undertaking, many people sustain serious injuries from slips and falls while attempting this simple task. Getting on and off large equipment and vehicles (e.g., dump trucks, motor graders, front loaders) accounts for a large percentage of injuries. Entering and exiting passenger vehicles also represent slip and fall exposures in certain situations.

Large Equipment

The best means of preventing slips and falls from equipment is to use three points of contact when mounting and dismounting. This process means that either two hands and one foot or one hand and two feet are in contact with the equipment steps and rails.

For larger equipment, the specific procedure for three points of contact may vary based on equipment design. To ensure proper mounting and dismounting procedures, employees should consult with the manufacturer's recommended procedure. In many cases, manufacturers may provide training videos on the recommended procedures.

Employers should evaluate every truck and piece of equipment. They should provide additional steps, nonslip surfaces and hand holds where necessary.

Once the proper procedure for a type of equipment is identified, it is important to train employees on that procedure.



Maintain three points of contact with large equipment when mounting and dismounting it.

Additional Recommended Safety Rules

Employers should train employees on these measures:

- Only enter or exit when the equipment or vehicle is stationary.
- Always mount or climb down while facing the truck or the equipment.
- Make sure that the points of contact used are clear of debris and mud.
- Only use points of contact that were intended to be used to climb onto or dismount from the vehicle (hubs and such should not be used).
- Look for obstacles on the ground before exiting.
- Do not climb on or get down with something in a free hand. Put the item on the vehicle's floor and reach for it when on the ground.
- Do not rush to exit the equipment. Descend slowly to avoid straining a muscle.
- Never jump out. Employees may land off balance or on an uneven surface and fall.

Passenger Vehicles

For passenger vehicles, such as cars, pickups and SUVs, it is important employees make sure they have firm footing with one or both feet before putting their entire weight on their feet. People should maintain contact with the door, car roof or assist handle to develop the three points of contact.

Remember that sand and oily spots can lead to slips and falls just like snow and ice. Employers should remind employees always to be aware of the type of surface onto which they are stepping!



Be sure to have firm footing before exiting a passenger vehicle.

Shop Safety

Maintenance shops are multi-operational sites that harbor the potential for numerous slip and fall exposures due to the equipment and materials used, and the byproducts of the work.

Common Slip and Fall Exposures

Employees should be trained on the following safety measures:

- Cords and hoses left on shop floor
- Accumulation of wood and metal shaving
- Oil spots from mechanical work—may also include piles of oil-absorbing material
- Unsecured rugs
- Uneven steps
- Equipment or tools left in walkways
- Boards or metal strips that extend into walkway
- Storing equipment without adequate walking space
- Dirt and snow falling from stored equipment
- Poor lighting
- Uneven surfaces or protrusions due to drains, lift rails and thresholds
- Unsecured tools

Recommended Prevention Strategies

- Store hoses and cords on retractable reels. When possible, have reels extend from the ceiling to keep them from lying on floors.
- Maintain good housekeeping practices.
- Sweep floors regularly to remove accumulated shavings, oil dry and dirt.
- Clean up oil spots immediately.
- Remove boards and metal strips that extend into walkways.
- Store equipment and materials in a manner that allows space for walkways. This prevents someone from stepping over equipment.
- Inspect regularly to ensure that tools and materials are not left in walkways.
- Secure rugs so they lie flat on the floor.
- Keep stairs clear.
- Maintain good lighting.
- Mark uneven surfaces or protrusions on floor with bright paint.



Cords can tangle feet and cause people to trip.



Retractable reels store cords and hoses out of the way.



Sweep and dispose of shavings, oil dry and dirt frequently.

Elevated Work

Slips and falls from elevated work platforms such as ladders, scaffolds and decks are not as frequent as other types of slips and falls, but the resulting injuries to employees tend to be serious.

Ladder and Step Stool Safety

Ladder-related falls are the most typical falls from an elevated surface. Falls from ladders are a result of a number of factors, such as:

- using a ladder that is too short for the task.
- setting up a ladder incorrectly or in an unstable manner.
- overreaching when on a ladder.
- walking up a ladder with a load in hand.

Employees who may use ladders for their jobs should be trained on the following points according to OSHA:

- correct selection of ladders for the task (i.e., height, weight limits and type)
- inspection of ladders prior to use
- appropriate setup of ladders including securing to base if applicable
- properly ascending and descending ladders with three points of contact

The Minnesota Safety Council (to which all MCIT members have a membership) has videos to assist with ladder safety training. Ladder manufacturers may also have other resources to assist with training, selection and inspection.

Chairs or other makeshift platforms are not intended for elevated work. Employers should not allow chairs to be used in lieu of an approved step stool or ladder regardless of the height of the task.



Appropriate step stools allow employees safely to reach items stored on high shelves. Never use chairs as step stools.



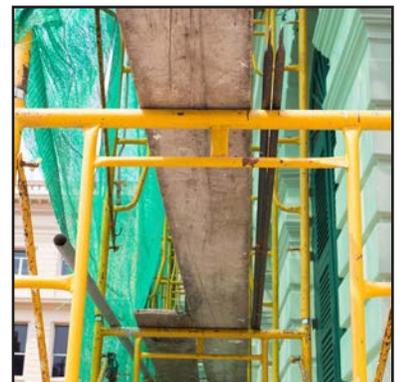
Proper use of ladders is key to preventing falls.

Scaffolding and Elevated Platforms

All OSHA standards regarding scaffolding (1910.27) should be followed at all times. Poor construction or lack of proper railings are two of the most common reasons people fall from scaffolding. Employers should only allow qualified employees to set up scaffolding. Inspect the scaffolding each day and ensure all rails are in place and properly secured when scaffolding is in use. Employees should always climb scaffolding using three points of contact on the scaffolding rungs.

For moving work platforms, use basket trucks or lifts with proper fall protection. Never use the bucket of a loader as a work platform. Buckets are not designed for this task. Many serious injuries occur when employees are knocked out of the bucket.

Finally, when working from elevated decks, always ensure that the railing or other fall protection system is in place and any gates or chains are in place before starting a task.



Inspect scaffolding regularly to ensure that it is properly set up and that safety measures are in place.

Rooftops, Other High Elevations

Work on rooftops or other high elevations may require additional measures to ensure that employees are protected from falls. Review OSHA Standard 1910 subpart D—Walking-Working Surfaces for more information.

Personal Health

Ice and snow, uneven walking surfaces and other contributing factors are generally the main causes of slips, trips and falls. However, certain health issues can also contribute to slip, trip and fall accidents:

- Chronic health conditions that cause limited mobility, flexibility or balance can factor into slip, trip and fall accidents.
- Low blood sugar can make a person disoriented, lose his or her balance or faint.
- Medications, such as cold medicines, cough syrup and some prescriptions, can affect basic motor skills and cause imbalance. Employees taking medications that can affect their performance should be encouraged to report this to their supervisors.
- Sleep deprivation can affect balance in a manner similar to some medications. Balance and awareness can be impeded if a person is tired.



Some cough syrups and other medications can affect people's balance.

Employers may want to consider a wellness program or some other means of educating employees about personal health factors that can contribute to an increased risk of slipping, tripping and falling. Always be sure to consult with an employment attorney or human resources professional for guidance in such matters.

Resources

As part of the Step Wisely slip, trip and fall prevention program, MCIT provides its members with several resources to help them reduce the number and severity of slip, trip and fall accidents:

- **Hazard awareness and prevention materials** include wall posters, mini fliers, table tents, e-mails, animated videos (MCIT.org/step-wisely/)
- **Three points of contact mini campaign** for entering and exiting large equipment safely, includes wall poster, mini flier, table tent, e-mail and vehicle sticker (MCIT.org/step-wisely/step-wisely-three-points-of-contact-materials/)
- **Quick Take training scripts and Power Point training presentation** (MCIT.org/step-wisely/step-wisely-training-materials/)
- **Articles** about winter slip, trip and fall prevention and claim management (MCIT.org/step-wisely/step-wisely-employer-resources/)
- **Checklist for Recognizing Slip, Trip and Fall Hazards** (MCIT.org/step-wisely/step-wisely-employer-resources/)
- **Minnesota Safety Council materials**, including safety videos, fact sheets and articles (MinnesotaSafetyCouncil.org).

MCIT Loss Control Consultants

MCIT members have an assigned loss control consultant who can provide safety information and consultation at no additional cost. Members should call MCIT toll-free at **1.866.547.6516** to connect with their consultant.

