

Acknowledgements

The development committee for this document consisted of representatives from the following associations. Our thanks to the following individuals, their companies and associations for contributing the time and energy for the completion of this project.

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Willi Schmid	Devon Canada Corporation	CAPP
Don Sharpe	ATCO Pipelines	CEPA
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Rick Theriau	Halliburton Canada	PSAC
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Toolbox Talks

Looking to raise awareness of slips, trips and falls in your workplace? Use this document to talk about

- ✓ Footwear, Use, Care and Maintenance
- ✓ Housekeeping: Standards and Expectations
- ✓ Slipping – Tripping – Falling

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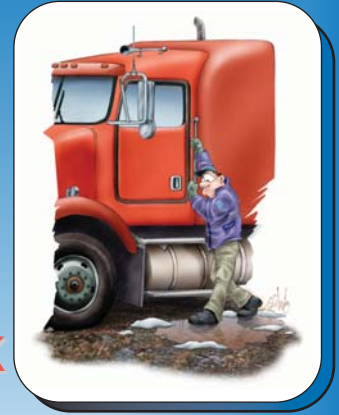
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CPSC GUIDE TO SAFE WORK



ON

SLIPS, TRIPS, AND FALLS



MAY 2005





The Stats Tell The Story

In Canada, about 60,000 workers are injured on the job from slips, trips and falls every year. This accounts for 15 % of the lost-time injuries accepted by Workers' Compensation Boards (WCBs) across the country. Besides being a huge financial loss, these injuries can cause people pain and suffering, and much too often even death.

However, tens of thousands of examples in cartoons indicate how we tend to make light of slips, trips and falls. But they're no joke, especially in the workplace with all its extra hazards.

1 Slips, Trips, or Falls – What's the Difference

Slips and Trips

Slips and trips result from some kind of unexpected change in the contact between your feet and the surface you are walking on. Slips happen when you don't have enough traction between your feet and the surface. With slips, your feet are going out from under you. Trips occur when your foot hits something and you lose your balance. With trips, you are falling in the



direction of your momentum. The illustrations on this page show the difference between slips, trips, and falls as we term them in this document.

Falls

Technically, both slips and trips are ways that you fall—they account for about 60 per cent of falls. There are so many that we put them in their

own categories. In this document, when we talk about falls, we are talking about all the other ways you fall that aren't slips or trips. For example, you may lose your balance on stairs and fall down them. Or you may **fall off a ladder (12)** or platform or from a piece of machinery. Forty per cent of falls are falls from a height (rather than from the same level). Of these falls, we divide them into falls from a low elevation and **falls from high elevations (8)**.



2 Injuries from Slips, Trips, and Falls

Bumps and bruises, sprains and strains, tears and broken bones: these are all injuries you can get from slips, trips, and falls. But some more serious injuries can occur as well, such as head injuries and impalement. You may have heard that elderly people have died from injuries from falling, but healthy young workers have also died or sustained life-altering disabilities from slips, trips, and falls. This can happen from common slips, trips, and falls, or due to complicated worksite hazards.

"Unusual" Possibility for Injury

Worksite hazards that substantially increase the risk of injury resulting from a fall are defined as having an "unusual possibility of injury." This means you're working in a location where your injury would be worse than if you were injured on a solid, flat surface. Think about blunt or sharp objects, exposed corners, rutted dirt, and other such hazards that could do extra harm to you if you fell on or against them.

So, take a good look at your work environment and walking surfaces. Is it wet, or bumpy, or sloped where you need to walk? Are there objects you may bump against or come into contact with if you fall, or even get impaled on? In these cases, many jurisdictions lower the height where fall protection systems have to be used.

Government regulations and corporate policies are implemented to ensure a safe working environment to protect you, but rules on paper can't keep you safe if you don't follow them. Remember that you are responsible for your safety and health — always be aware of your surroundings so that you can take the necessary care and attention, and **practice good housekeeping (15)**.



2 Injuries from Slips, Trips, and Falls

3 Causes of Slips

The illustration below shows a number of slipping hazards you may encounter on the job, or even in your personal life. Can you find four of them?



Slipping Hazards: Nail, Metal Fillings, Water, Foam

Slips happen when you don't have enough traction or friction between your **boots (13)** and what you're walking on. Surfaces vary so expect a slippery or loose surface only a few strides away.

Slippery Stuff

Watch for substances on surfaces that can make them slippery.

Loose Stuff

Look out for loose items on top of surfaces that pose slipping hazards, e.g. loose, unanchored mats that can slide out from under you, and small diameter gravel.

Other Factors

Other factors to consider are inadequate lighting and your level of attention to hazards. You are at a higher risk of injury if workplace lighting is inadequate. If you aren't paying attention to your footing, you can be unaware of the hazards around you. Just think of how little time it takes to step out of a truck onto a patch of black ice and have your feet fly out from under you. Keep your mind on what you are doing at all times – even for mundane activities such as walking, descending stairs, or climbing in and out of equipment.

Slippery Stuff

- ✍ Water or wetness, such as wet mud),
- ✍ Oil or spills of any kind
- ✍ Smooth, cold surfaces (e.g. cold metal stairs)
- ✍ Freshly waxed flooring
- ✍ Wet footwear
- ✍ Visible or black ice
- ✍ Frost
- ✍ Snow

3 Causes of Slips

4 Prevention of Slips

How Do I Prevent Slips?

- ✎ Take your time and pay attention to where you are and where you are going.
- ✎ Be aware of lighting issues around you, such as insufficient light, light with blind spots, or shadows that hide objects. Can you move around and do your tasks safely? Use a flashlight when entering a dark area. Also, schedule outdoor work during daylight hours.
- ✎ Create temporary or permanent additional traction such as spreading sawdust to absorb liquids and provide traction or coating floors with paint embedded with sand
- ✎ Replace floors, or install mats, pressure-sensitive abrasive strips, abrasive-filled paint-on coating, or metal or synthetic decking—these improve traction and reduce foot fatigue. But remember that even this high-tech flooring still requires **good footwear (14)** and even **good housekeeping (15)** for safety.
- ✎ If needed, wear overshoes for better traction—especially over those grippless dress shoes.
- ✎ Shorten your stride to suit walking surface and tasks.
- ✎ Point your feet outward slightly for extra balance.
- ✎ Make wide turns at corners.
- ✎ Keep one free hand (a "hand for yourself") when you're using stairs, ladders, or ramps. If your hands are full, what can you use for balance and to protect yourself or break a fall.



4 Prevention of Slips

5 Causes of Trips

The illustration below shows a number of tripping hazards you may encounter on the job, or even in your personal life. Can you find four of them?



Tripping Hazards: Tools, Carpet, Drawer, Power Cord

Trips occur when your foot hits something in your way so that you lose your balance and fall.

Uneven Surfaces

Watch for uneven surfaces.

Uneven Surfaces

- Wrinkled rugs or carpet
- Frozen vehicle ruts
- Uneven steps, thresholds, or slopes

Objects in the Way

Look out for things in your path.

Objects in Your Way

- Materials, tools, or clutter on the ground or floor
- Uncovered cables
- Low cabinet drawers left open
- Narrow or short steps

Other Factors

As with slips, there are some general factors that contribute to trips: your level of attention, inadequate lighting, and any obstructions that limit your line of vision. If the light is poor or you are carrying something large and cannot see the ground in front of you, then you are more likely to trip on a workplace hazard. As usual, focus on your task, including moving around the worksite—pay attention to your path!

5 Causes of Trips

6 Prevention of Trips

How Do I Prevent Trips?

- ✍ Take your time and pay attention to where you are and where you are going.
 - ✍ Be aware of lighting issues around you, such as insufficient light, light with blind spots, or shadows that hide objects. Can you move around and do your tasks safely? Use a flashlight if you enter a dark area. Also, try to schedule outdoor work during daylight hours.
 - ✍ Make sure anything you are carrying, pushing, or moving doesn't stop you from being able to see obstructions or other tripping hazards.
 - ✍ Use the engineered devices that help you keep your balance, such as hand rails on stairs.
- 
- ✍ Keep up good workplace housekeeping practices and have an effective **housekeeping program (16)**.
 - ✍ Point your feet outward slightly for extra balance.
 - ✍ Keep one free hand (a "hand for yourself") when using stairs, ladders, or ramps. If your hands are full, what can you use for balance and to protect yourself or break a fall?

Good Workplace Housekeeping Practices

- ✓ Mop or sweep debris from floors
- ✓ Remove walkway obstacles and clutter
- ✓ Secure mats, rugs and carpets that do not lay flat
- ✓ Close file cabinet or storage drawers
- ✓ Cover cables that cross walkways
- ✓ Clean up spills immediately
- ✓ Mark spills and wet areas
- ✓ Keep working areas and walkways well lit
- ✓ Replace burnt out light bulbs and faulty switches

6 Prevention of Trips

7 Causes of Falls



Considering that falls from low elevation or walking can cause serious injury and even death, **falls from higher elevations (8)** obviously can be catastrophic. A number of reasons may cause you to fall either short distances from walking or relatively low elevation, or cause you to fall from higher up including:

- ✘ You may fall jumping from a platform to the ground or climbing from equipment to the ground.
- ✘ You may fall off the side or edge of an area of construction or through a wall opening.
- ✘ You may step into a floor hole you did not see.
- ✘ You may fall off of or along with an improvised stepping stool you are using for added reach, or you may unbalance a ladder by leaning off it instead of getting down and moving it (these reaches are the source of most falls from short heights).

Falls and Force

You throw a penny down the stairs and it hits someone in the head. That person would probably be pretty annoyed with you. What if you threw a penny onto someone's head from the top of a nine-story building? What kind of injury would that penny inflict? When you fall, your weight and your speed caused by the pull of gravity combine to create enormous force on your body upon impact.

You weigh a lot more than a penny, so remember that you don't have to fall very far at all to feel the effect of this force! It's one of the reasons health professionals always plead for people to wear bicycle helmets – you're not very far from the ground on a bike but if you fall off and hit your head you can sustain severe injuries and even die. You aren't on a bike at the worksite, but the same rules of gravity and force apply on the job.

7 Causes of Falls

8 Prevention of Falls

How Do I Prevent Short-Distance Falls?

- ✎ Take your time and pay attention to where you are and where you are going.
- ✎ Be aware of lighting issues around you, such as insufficient light, light with blind spots, or shadows that hide objects. Can you move around and do your tasks safely? Use a flash-light if you enter a dark area. Also, try to schedule outdoor work during daylight hours.
- ✎ Use the engineered devices that help you keep your balance, such as properly maintained and used ladders and ramps.
- ✎ Use barriers such as guard rails, and warnings such as flagging tape for unprotected/open sides, edges, wall openings and floor holes.
- ✎ Remember the importance of using three-point contact when you are getting in and out of vehicles and equipment or **climbing ladders (11)**.



How Do I Prevent Falls From Higher Up?

Many workplaces involve work (often defined as above 1.2 – 3m) that requires you to know about fall protection/arrest. You'll need to learn about freefall limits, clear fall paths, total fall distance, and selecting appropriate personal protective equipment and using it properly.

Where to Get More Information

- ✎ Alberta Occupational Health & Safety Code, Part 9, Fall Protection (<http://www3.gov.ab.ca/hre/whs/law/index.asp>)
- ✎ British Columbia Occupational Health and Safety Regulation, Part 11, Fall Protection (<http://regulation.healthandsafetycentre.org/s/Home.asp>)
- ✎ Saskatchewan Occupational Health and Safety Regulations, including but not limited to sections 86, 87, and 100-107 (<http://www.qp.gov.sk.ca/documents/English/Regulations/Regulations/O1-1R1.pdf>)

You may receive formal training from your employer or your employer may send you to one of a variety of fall protection industry training courses.

8 Prevention of Falls



Sure, You Know How to Walk But ...

Injuries from slips, trips, and falls connect back to something people have been taking for granted — walking. We all do it and it's pretty automatic. But remember how you learned to walk: a few steps toward a parent and then you tumbled over. As you grew up, you learned how not to fall on stairs, on a bike, and maybe on skates or skis.

Similarly, you must learn how not to fall in the workplace. You need to apply special skills and knowledge in this new and changing environment to avoid slips, trips and falls. Find a lot of helpful prevention information in this infoflip, and

Have a Safe Day!

9 Mental and Physical Condition

Why Does My Mental Condition Matter?

If you've been drinking alcohol or taking drugs – illegal or some over-the-counter medications – you can be putting yourself at risk. Mental impairment from alcohol or drug use increases the likelihood that you will slip, trip or fall. If your mental condition is impaired you will reduce your ability to notice and react to hazards. It's not a coincidence that police sobriety tests often ask you to walk in a straight line!



Besides alcohol and drugs, other things can affect your mental condition. Fatigue is known to cause the

same kind of impairment as alcohol. And any loss of mental focus such as daydreaming about your new pay raise or what you're going to do next weekend, also takes your mind from your task. Unusual interactions with other people can also distract you from the hazards of slips, trips and falls. For example, in 2004, two workers on a drilling rig got into a struggle at a height above 3 m and both fell. One of them died. The lesson is to keep your mind on your job and identify and reduce the hazards around you.

Why Does My Physical Condition Matter?

Will physical conditioning or stretching prevent slips, trips or falls? Not exactly. But if you're in good physical condition, you will have quicker reflexes and limber, toned muscles to help you keep or recover your balance and if you fall, to help you recover faster. This becomes even more important when you get older, because as you age, your ability to recover from an injury slows down.



If you're an office worker, this still applies. Working in one place for long periods may reduce your ability to respond to a slip, trip or fall and add to the severity of injuries. Basic stretching for mobility and flexibility can help protect you from injury. This applies to an office, a worksite, and on the job or off the job.

9 Mental and Physical Condition

10 Danger Zones for Slips, Trips and Falls

Unprotected Walkways and Platforms

Unprotected walkways, platforms, wall openings, and floor holes are hazards for falls. Guarding methods should be used for protection. For instance, every runway, walkway, open-sided floor or platform four feet above ground level or above an adjacent floor should be guarded by a standard rail (42 inches high). The rail should have a toe board whenever people can pass beneath the open sides, or there is moving machinery below, or there is equipment below for which falling materials could create a hazard.

Scaffolds

Working with heavy equipment and building materials on the limited space of a scaffold is difficult. Without fall protection or safe access, it becomes hazardous. Falls from improperly constructed scaffolds can result in injuries ranging from sprains to death.



10 Danger Zones for Slips, Trips and Falls

11 Working Around Ladders

Portable Ladders

Portable ladders are used to perform many tasks. Although simple, they still need planning and care to be used safely, since falls from ladders can cause injuries from sprains to death. Falls can occur if ladders are not safely positioned as they may move and slip from their supports or be unsteady and cause people to lose their balance.



Some of the more common hazards involving ladders such as instability, electrical shock, and falls, can be predicted and prevented. Take the following measures:

- ✘ Climb and use ladders carefully and don't hand-carry loads on a ladder.
- ✘ Don't reach so that you lose your balance—move the ladder. Don't stand on the top three rungs.
- ✘ Keep away from sources of electricity as electrical shock can also cause you to fall, compounding your injuries.
- ✘ Check that the ladder is in good repair: a damaged side rail may cause one side of a ladder to give way. If available, use non-skid feet or spurs to prevent a ladder from slipping on a hard, smooth surface.
- ✘ Always use portable ladders that are long enough; to reach a walking surface or roof, it must extend at least one metre beyond. Position them properly: the base should be spaced one foot away for every four feet it reaches up, and ensure that extension ladders have both locks holding to prevent overloading a rail.
- ✘ Step ladders should be securely spread open. Never use a folding step ladder in an unfolded position.
- ✘ Fixed ladders must be the appropriate ladder required for the right grip and centre of balance, which will depend on the height being ascended.

11 Working Around Ladders

12 Steep Slopes and Hills

Steep Slopes, Hills, Inclines and Riverbanks

These areas are hazardous for slips, trips and falls because their angles affect your balance. They may also have bumpy, uneven, loose, unstable, or wet surfaces that affect your traction. Take care when you walk or work on such surfaces.

The Canadian Association of Geophysical Contractors (CAGC) has a class system for assessing terrain that you may find helpful. It is briefly summarized as follows:

- ✘ Class 1: Flat terrain
- ✘ Class 2: Rolling hills
- ✘ Class 3: Steep terrain (less than 3 m or 10 ft).
- ✘ Class 4: Very steep terrain (less than 3 m or 10 ft).
- ✘ Class 5: Mostly vertical terrain (greater than 3 m or 10 ft).
- ✘ Class 6: Vertical terrain (greater than 10 ft).

See 'Best Practices' at www.cagc.ca to learn more.



12 Steep Slopes and Hills

13 Appropriate Footwear

Choosing Footwear

When considering footwear for work, there are many different kinds of work boots for different kinds of work. Some workers wear other footwear than boots to work. High



heels are standard in offices and stock clerks wheel around large grocery stores on inline skates. What's important to remember is that you need the right footwear to protect yourself from worksite hazards and the hazards of slips, trips, and falls.

Safety footwear protects feet against injuries such as impact, compression, and puncture. If foot protection is required for your work your employer will have a footwear policy that should include information on selection, fit testing, training, maintenance, and inspection. Your employer can tell you what **kind of footwear (14)** you need for your work. Consider boots that lace up over the ankles for extra reinforcement.

Footwear Fit







Properly fitting footwear increases your comfort and decreases fatigue, thereby enhancing safety. Boots should have ample toe room (so your toes are about 12.5 mm from the front) and should fit snugly around the heel and ankle. Allow for extra socks or special arch supports when trying them on. Walk around a bit in the boots before you buy them, to check if they will be comfortable. And once you have them, be sure to lace them up fully—well laced high-cut boots provide support against ankle injury.

Footwear Care

Take care of your safety footwear—it's an important part of your PPE. Use a protective coating to make footwear water-resistant. Inspect it regularly for damage (e.g. exposed steel toes), and repair or replace worn or defective footwear.

13 Appropriate Footwear

14 Footwear Symbols and Use

	Has sole puncture protection and grade 1 protective toe (for impact up to 125 joules). Use for any industrial or heavy work environment, including construction, where sharp objects are present (such as nails).
	Has sole puncture protection and grade 2 protective toe (for impact up to 90 joules). Use for light industrial work environments needing puncture and toe protection.
	Has soles with electric shock resistance. Use for industrial environment where unintentional contact with live electrical conductors can occur (shock-resistance properties are greatly reduced by wet conditions and wear).
	Has soles that are static dissipative. Use for industrial environment where static discharge can be a hazard for workers or equipment.
	Has soles that are electrically conductive. Use for any industrial environment where low-power electrical charges can be a hazard for workers or equipment.
	Provides protection when using chainsaws. Use for forestry workers and others who work with or around hand-held chainsaws and other cutting tools.

The above information on footwear symbols will help you select what you need and comes from the Canadian Standards Association Z195.1-02 Guideline on Selection, Care and Use of Protective Footwear.

Ensure the CSA-certified footwear you choose has the proper ratings for applicable hazards and the proper sole for surface conditions. Keep in mind you may need to select for two or more conditions, such as cold and slippery footing.

Labels can usually be found on the tongue of the right shoe at ankle height or at ankle height on the shoe itself. Other markings on footwear include an internal protection code marked on the outside or inside of the right or left boot/shoe. This is an example of what it may look like:

Position	1	2	3	4	5
Mark	1	P	M	E	X

Position and Description
1: Toe Protection 1 = grade 1; 2 = grade 2; 0 = none
2: Sole Puncture Resistance P = puncture resistant; 0 = none
3: Metatarsal Protection M = metatarsal protection; 0 = none (Use metatarsal protection where there is a potential for injury on the top of the foot between the toes and ankle)
4: Electrical Protection E = shock resistant; S = static dissipative; C = conductive; 0 = none
5: Chainsaw Protection X = chainsaw protection; 0 = none

14 Footwear Symbols and Use

15 Good Housekeeping Practices

Housekeeping 101

Poor housekeeping can cause injuries such as trips over loose objects, slips on greasy, wet or dirty surfaces, impacts against projecting objects, and cuts or punctures on nails, wire, or steel strapping that is sticking out. Without good housekeeping practices, other preventative measures like special flooring or **safety footwear (14)** won't effectively prevent slips, trips, and falls.

Worksite housekeeping includes keeping work areas neat and orderly, maintaining unobstructed halls and floors, and removing waste from work areas. It should be an ongoing operation, not an occasional or panic cleanup, which is ineffective in reducing slips, trips, and falls.

Good Housekeeping Practices



- ✘ Mop or sweep debris from floors
- ✘ Remove walkway obstacles and clutter
- ✘ Secure mats, rugs and carpets (e.g. by tacking, taping) that do not lay flat
- ✘ Regularly inspect, clean, and repair all tools and take any damaged or worn tools out of service
- ✘ Close file cabinet or storage drawers
- ✘ Cover cables that cross walkways,
- ✘ Clean up any spills immediately,
- ✘ Mark spills and wet areas including just-cleaned floors,
- ✘ Keep working areas and walkways well lit, and
- ✘ Replace burnt out light and faulty switches.



15 Good Housekeeping Practices

16 Good Housekeeping Program

Although it is important that you follow **good housekeeping practices (15)** as an employee – because you are ultimately responsible for your own safety – your employer also benefits from having a good housekeeping program. Having such a program is cost-effective because it helps prevent injuries and helps eliminate repeated handling of the same material to make more effective use of workers' time. Other benefits include decreased fire hazards, fewer exposures to hazardous substances, more effective use of space, reduced property damage with improved preventative maintenance, less janitorial work, and improved morale.

Characteristics of Good Housekeeping

- ✍ Planning and managing orderly storage and movement of materials from entry to exit, including a material flow plan for minimal handling.
- ✍ Consideration for the layout of the workplace, aisles, the adequacy of storage facilities, and maintenance.
- ✍ Work areas that are not used for storage.
- ✍ Extra bins/more frequent disposal if needed.
- ✍ Plans for worker training on the products they use, posting signage, and reporting unusual hazards.
- ✍ Integration of housekeeping into jobs so that good housekeeping is achieved regularly, not just periodically.
- ✍ Identification and assignment of responsibilities for clean-up during the shift, day-to-day cleanup, waste disposal, removal of unused materials, and regular inspections to ensure clean-up is continuous and complete.
- ✍ Inspection, maintenance, upkeep and repair of tools, equipment, machines and processes.

Elements of Effective Housekeeping Programs

- ✍ Collection and removal of dust, dirt, and chips;
- ✍ Prevention and control of spills;
- ✍ Disposal/recycling of waste materials;
- ✍ Provision of adequate, clean, well maintained employee facilities (e.g. lockers, washrooms, lunchrooms, etc.);
- ✍ Provision of adequate and safe storage areas;
- ✍ Maintenance of clean and clear surfaces. including adequately sized, clear, well lit aisles and stairways;
- ✍ Maintenance of adequate lighting;
- ✍ Maintenance of tools and small equipment; and
- ✍ Maintenance of buildings/large equipment/machinery.

For further information, go to Workplace Housekeeping – Basic Guide by the Canadian Centre for Occupational Health and Safety (CCOHS), available on their website at <http://www.ccohs.ca/oshanswers/hsprograms/house.htm>.

16 Good Housekeeping Program

Sources

The website links and document titles below indicate sources of information consulted in the development of this guide and can be referred to for more information. All links verified at time of publication.

Canadian Centre for Occup’l Health & Safety CCOHS

The CCOHS is the source for the material on Housekeeping. The PSC gratefully acknowledges this contribution.

http://www.ccohs.ca/oshanswers/safety_haz/falls.html

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Intern’l Society for Fall Protection: <http://www.isfp.org/>

Dep. of Agricultural Engineering, University of Missouri

<http://muextension.missouri.edu/xplor/agguides/agengin/g01932.htm>

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Canadian Standards Association: <http://www.csa.ca>

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