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It's probably happened to most of us. That momentary lapse of inattentive thinking about a personal problem, or a distraction by an activity that ends in a slip, trip, or fall, a stumble down a stairway, a trip over an uneven surface, or even slipping on the ice.

Distractions can unfortunately lead to unfortunate events, ranging from a simple bruised shin to an extremely serious injury, and is just one of a variety of conditions and situations that set the stage for slips, trips, and falls in the workplace.

According to the US Department of labor, slips trips and falls make up the majority of general industry accidents, with 19 percent of them being disabling.

Slips, trips and falls are a leading cause of fatalities, and they are all preventable with established programs and safety procedures.

OSHA's Walking and Working Services Regulation applies to all permanent places of employment.

## OVERVIEW

Discussed in this training will be the causes of slips, trips and falls, identifying the hazards associated with walking and working surfaces, common preventative measures, and discussion of safety techniques for reducing the impact of slips, trips and falls.

## CAUSES OF SLIPS, TRIPS, and FALLS

Slips, trips, and falls normally happen when there's a lack of traction between the shoes and the walking or working surface. Sometimes they happen when the shoe makes unintentional contact with a fixed or movable object, which may lead to a fall.

Slip, trip and fall hazards resulting from poor housekeeping practices, like wet or greasy floors are a problem. The solution is better housekeeping and using wood dust or powder to cut or absorb spills. Even wet leaves can cause a slip or fall. So, for this circumstance, good housekeeping practices are very important.

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Poor building and property maintenance can also stimulate hazards for slips, trips, and falls. Think about uneven walking surfaces or newly waxed floors.

And how about loose flooring, carpeting, mats and even poor lighting. Construction sites are notorious for these hazards. We also have missing floor tiles, uneven floor tiles, ramps, and damaged stairs.

Another source of hazards can be from improper use of equipment and employee actions. Not being mindful of shoes with wet, muddy, greasy, or oily soles, leaving a file cabinet open on a desk, and tools and equipment not picked up after use are controllable employee actions.

When using ladders, these accidents can happen just by improper use of ladders and stairs, wearing shoes not designed for the surfaces of use, improper placement of electrical cords or cables, obstructions such as hoses stretched across an aisle, and unsafe behavior such as horseplay or jumping from high places are all employee actions that can lead to slips, trips and falls.

Rain, sleet, ice, snow, hail, and frost cause outdoor walking and working surface hazards as well as indoor wet surfaces from frequent foot traffic at exterior doorways during weather events.

## PREVENTION

The best practice in eliminating slip, trip and fall hazards is with proper housekeeping, maintaining aisles and passageways, appropriate installation of covers and guardrails, accurate floor loading, protection indicators, and correct use of ladders, stairs and scaffolding.

## HOUSEKEEPING

General housekeeping requirements include keeping workplaces clean, orderly and sanitary, maintaining floors as clean and dry as possible, and ensuring all floors, workplaces and hallways are free of nails, splinters, holes and loose boards.

Aisles and passageways must be kept clear and in good repair. Permanent aisles and passageways must be marked to ensure nothing is stored or placed in them. Where mechanical equipment such as forklifts are used, aisles, loading, docks and doorways must be maintained with sufficient safe access.

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## CONTROLS

Covers or guardrails must be provided to protect employees from the hazards of open pits, tanks, bats, ditches, and other falling hazards.

## FLOOR OPENINGS

A floor opening is any opening in a floor into which a person can walk. Floor openings must be guarded by a standard guardrail or a cover of standard strength and construction and marked as hole. While the cover is not in place, the opening must be protected by a standard guardrail or constantly observed until it's protected.

Some types of floor openings are stairway floor openings, platforms, hatchways and skylight floor openings and holes.

## LOAD RATINGS

Designed floor load ratings must be conspicuously posted where items are stored. It is unlawful to place a load rating limit exceeding the limit which has been approved by the building official. It's also dangerous.

## PORTABLE LADDERS

Portable ladders must be maintained in good condition and inspected frequently for defects. Ladders should be inspected before use. Check for cracks, loose rungs, splinters and sharp edges.

And, never paint ladders. The paint can hide potentially dangerous conditions. Also remember to check the condition of each step.

Remove dirt, oil, grease and other substances that could cause slips. If defects are found, The ladder must be tagged out and removed from service.

Portable ladders are designed as a one man working ladder based on a 200 pound load and must not be used for anything other than the intended use.

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## LADDERS IN GENERAL

Step ladders longer than 20 feet are prohibited for use. Straight ladders, single length or individual sections must not exceed 30 feet.

Extension ladders must not exceed sixty feet in length when fully extended. And, don't ever splice short ladders together to make one long ladder!

## STAIRS

Stairs must always be kept clear and free of grease, oil and obstacles which could cause slips and trips. Never store items on stairs, even for a short time.

Lighting is very important as well to help ward off slips, trips, and falls. Stairwells should be well lit with sturdy handrails on both sides. This allows people using the stairwell to have one hand free to hold onto the handrail. Especially if they are carrying something in their other hand.

Additionally, it's important for all steps to have the same rise and depth and have visible edges.

## SCAFFOLDING

There are several general requirements that must be observed when using scaffolding. Scaffolding must be designed and directed to support four times the maximum intended load and not altered without the manufacturer's approval. Also, scaffolding must never be moved while personnel are on it. Workers on the scaffolding must be protected from overhead hazards.

When scaffolding exceeds 10feet, an approved guardrail system must be installed if people are working or walking underneath the scaffold.

Wire mesh or similar material must be used to prevent tools or material falling to the next level, and all scaffolding must be equipped with a ladder or equivalent to provide safe access.

## FALLS

There are basically two types of falls. Falls on the same level and falls elevated falls. Same level falls have a high frequency rate with, a low severity impact. Elevated falls have a high severity impact but a low frequency rate. That makes sense, right?

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Same level falls are generally slips or trips. Injury results when the individual hits a walking or working surface or strikes some other object during the fall. Same level falls are generally described as slip and fall, trip and fall, trip or step and fall.

## ELEVATED FALLS

Over 60 percent of all elevated falls are from less than 10 feet and, on average, seventeen percent of all serious injuries in the workplace are from elevated levels. Elevated falls are categorized into 4 groups

- Falls on stairs
- Falls from vehicles and equipment
- Falls from loading docks
- And falls from ladders.

## HOW SLIPPERY IS IT?

How slippery a surface is will depend on what the surface is made of. Then add water, or spill something like grease or oil, and the slip potential increases.

Slips are primarily caused by a slippery surface and then **compounded** by things such as wearing the wrong footwear. Traction, which is the force that allows us to walk without slipping traction depends on the quality of both the walking surface and the soles of your shoes.

Providing dry walking and working surfaces and slip resistant footwear is the answer to slips and their resultant falls and injuries.

## BEST SHOE FOR THE JOB

When you can't avoid walking on slippery surfaces, choose the best shoes for the job. Wear shoes that provide high traction between the walking surface and the sole of the shoe. Walk slower than you usually do and take smaller, compacted steps. Bend your knees a little and point your toes out slightly in work areas where the walking and working surface is likely to be slippery.

Floor Mats and non-slip strips of floor coatings should be used when wet surfaces are unavoidable.

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## MOISTURE

Use moisture absorbent mats with beveled edges in entrance areas to remove excess moisture and wetness from the soles of shoes. The mats should have a non-skid bottom and be changed as often as necessary.

Use display signs to warn others about the wet floor after floor mat use.

The soles or tread of shoes tend to retain some moisture, so use caution as you proceed. Use nonskid strips and floor coatings in troublesome areas to increase traction capability.

## TRIPS AND FALLS

Trips and falls occur when the front foot strikes an object and is suddenly stopped. The upper body is then thrown forward and a fall occurs.

As little as three eighths of an inch rise in a walkway can cause a person to stub his or her toe, resulting in a trip and fall.

Often overlooked, but it happens, and it hurts is when you run into or fall over an open drawer, like a desk drawer. So always be mindful of keeping the drawers closed.

Hoses and cords should never become permanent fixtures across an aisle or entry way. If the hose or cord is needed for more than a few minutes, they should be secured to the floor. Rope off areas where a number of tools and parts are required for a job and once you've finished, be sure to pick up tools and equipment without delay.

And, don't forget to use markings and warning signs for potentially hazardous areas.

## MARKINGS

Colored striping or highly visible markings can be used to show level changes in a floor surface and indicate the entrance to a ramp area. Also carrying an oversized object can obstruct one's vision and result in a slip or a trip.

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## STEP AND FALL

Another type of working and walking surface fall is the step and fall. This occurs when the front foot lands on a surface lower than expected, such as when unexpectedly stepping off a curb in the dark. In this type of fall, the person normally falls forward.

A second type of step and fall occurs when one steps forward or down and either the inside or outside of the foot lands on an object higher than the other side. The ankle turns and one tends to fall forward and sideways.

## BEHAVIOR

There are specific behaviors which can lead to step and fall injuries. Behavior is the toughest condition to control, because it's human nature to let our guard down for short periods of time and be distracted by random thoughts or doing multiple activities.

Being in a hurry will result in walking too fast or running, which increases the chances of a slip, trip or fall. Taking shortcuts sudden direction changes not watching where one is going using a cell phone carrying materials which obstructs the vision wearing sunglasses in low light areas, not using designated walkways and speed are common elements in many on the job injuries.

These and other behaviors caused by lack of knowledge, impatience, or bad habits developed from past experiences can lead to falls and serious injuries.

## TRIPS AND FALLS ON STAIRS

Trip and fall trips or falls on stairs can happen going up or down a flight of stairs. Only a slight difference in the height of subsequent steps can cause a person to trip and fall. Eighty percent of falls on stairs occur on the first two or last two steps. And ninety percent stairway falls are due to unsafe behavior. Stairways deserve your full concentration, always.

Falls often happen when you are in a hurry or thinking of something else. Do not run up or downstairs. Do not skip step. Be sure to use the handrailing and never carry a load that requires use of both hands or blocks vision or it makes it difficult to maintain balance. Carry smaller, lighter loads and make more trips or get help with the load.

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## VEHICLES AND EQUIPMENT

Far too many injuries occur in the simple process of getting in and out of trucks, on or off tractors, machinery, wagons, trailers or truck beds.

Metal steps, like those on trucks and equipment, provide low traction, and that traction becomes even lower when they're wet, muddy or oily.

Keep the steps clean and dry. Whenever mounting or climbing on a vehicle or machine, always face the vehicle or equipment and have a good hand hold before stepping up. Pulling yourself up reduces the force between your shoe and the step, which reduces the danger of a slip.

Just like a ladder, the foot should be placed on the step or rung just in front of your heel under the arch. Again, always face the equipment when dismounting. When stepping down and backward, go one step down on the ball of the foot. This will provide more traction. Practice the three point system.

## THREE POINT SYSTEM

This system can significantly reduce the chances of injuring yourself through a slip or fall while entering or exiting a vehicle. The three-point system requires three of four points of contact to be always maintained with the vehicle, This could be two hands and one foot, or two feet and one hand. allows maximum stability and support, reducing the likelihood of slipping and falling. If three of your four limbs are always in contact with the vehicle, only one limb is in motion at any one time. One more tip that will save you from many sprains or worse. When getting off the bed of a truck or wagon or any similar level, step down backward. As much as you may want to, don't ever jump or fall-down forward.

## LOADING DOCKS

Loading docks are dangerous areas. They are frequently congested heavy traffic areas with working and walking surfaces that are often wet. Metal dock plates can wear smooth and become very slippery. In particular, the edge of a dock plate invites trips and falls accidental. Backwards steps can result in a fall from the dock.

Portable railings, which can be easily removed from the edge of the dock, could prevent many dangerous falls. Portable railings are removed when a truck or trailer is at the dock and



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replaced as soon as the truck or trailer leaves. Proper housekeeping, well designed traffic patterns, and the use of abrasive skid resistant surface coatings will reduce the risk of slips, trips and falls on loading docks.

## CLIMBING UP OR DOWN LADDERS

When climbing up or down a ladder, the three point system must be used to ensure safety. Always face the ladder and use both hands when climbing or descending. The rung should be just in front of the heel in the arch of the foot. Small tools may be carried in a tool belt, not in the hands, but a better choice is to raise tools and supplies with a toe line. Another frequent cause of ladder related injuries is attempting to reach too far left or right when working on a ladder.

## LADDER PLACEMENT

Ladders should be set at or as near as possible to a four to one angle for each 4 feet of rise from the base to the upper resting edge of the ladder.

The base should be 1 foot out from a vertical line from the upper resting edge of the ladder to the working surface.

For example, if a ladder is leaning against a ledge that is 16-feet off the ground, the base of the ladder should be 4-feet back from the wall. The base of the ladder must be firmly set so that there is no possibility of slippage or settling into soft ground. The resting edge of the ladder should have both side rails in contact with the object it is against.

Tying the top of the ladder to the supporting structure can also keep the ladder from slipping or sliding. When an extension ladder is used to gain access to a roof or similar area, the ladder should extend at least 3-feet above the edge of the point of support. Also, the top step of a step ladder is not designed to be used to gain height, but to be used as a tool support.

## TRAFFIC AND DOORWAYS

If it is necessary to use a portable ladder in a doorway or heavy traffic area, use precaution and block off the area, secure the doorway or have a coworker stand at the door while the latter is in use.

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## GOOD HOUSEKEEPING AND SAFETY

Good housekeeping is Critical safety and housekeeping go hand in hand. If your facilities housekeeping habits are poor, the result may be a higher incidence of employee injuries, ever increasing insurance costs, and regulatory citations. If an organization's facilities are noticeably clean and well-organized, it is a good indication that its overall safety program is effective as well. Proper housekeeping in work and walking areas is a routine and is still the most effective control measure in avoiding slip, trip and fall injuries. It is an ongoing procedure that is simply done as part of each worker's daily performance.

This means allowing time for cleaning the area, especially where scrap metal or waste is a byproduct of the work operation. One method which promotes good housekeeping and work environments is the painting of yellow lines to identify working and walking areas.

## LIGHTING

Adequate lighting to ensure proper vision is also important in the prevention of slips and falls. Moving from light to dark areas or vice versa can cause temporary vision problems that might be just enough to cause a person to slip on an oil spill or a trip over a misplaced object.

Use proper illumination in walkways, staircases, ramps, hallways, basements, construction, and dock areas.

Keep areas around light switches clear and accessible, and upon entering a darkened room, always turn on the light first. Keep poorly lit walkways clear of clutter and obstructions.

## HOW TO FALL

Obviously, our goal is to NOT slip, trip and fall. However, the possibility of a fall still exists. There are correct ways to fall. When falling, the objective is to have as many square inches of your body contact the surface as possible, thus spreading out the impact of the fall using these recommended procedures:

- Tuck your chin in
- Turn your head
- Throw an arm up

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It is better to land on your arm than on your head. While falling, twist or roll your body to the side. It is better to land on your buttocks and side than on your back. Keep your wrists, elbows and knees bent. And never try to break the fall with your hands or elbows.

If you find yourself in a slip, trip or fall, free your hands from any objects you're holding. Protect your most vulnerable points and try to spread the force of the fall's impact.

## NO PROBLEM

You may think slip strips and falls are not big problems, but the statistics prove otherwise. Awareness of slip, trip and fall hazards is important. Be aware of the possibilities no matter where you work. Respecting the hazards and following established safety procedures are essential parts of the prevention process. Follow procedures and make a commitment to protect yourself from injury.

## ELIMINATION

When a hazard is present, try to eliminate the hazard, and if that is not possible, warn others about the hazard. Until the problem can be reported to a supervisor or safety manager. For corrective action, you are in the best position to notice, correct or report hazardous behaviors and conditions.