

SAFETY MEETING TOPIC: Slips, Trips, and Falls

Falls are of two basic types: elevated falls and same-level falls. Same-level falls are most frequent, but elevated falls are more severe. 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. Over 60 percent of elevated falls are from less than 10 feet.

Slips and Traction

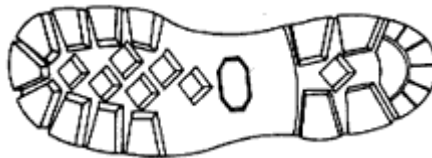
Technically, traction is measured as the "coefficient of friction." A higher coefficient of friction means more friction, and therefore more traction. The coefficient of friction depends on two things: the quality of both the walking surface and the soles of your shoes.

To prevent slips and falls, a high coefficient of friction (COF) between the shoe and walking surface is needed. On icy, wet, and oily surfaces, the COF can be as low as 0.10 with shoes that are not slip resistant. A COF of 0.40 to 0.50 or more is needed for excellent traction. To put these figures in perspective, a brushed concrete surface and a rubber heel will often show a COF greater than 1.0. Leather soles on a wet smooth surface, such as ceramic tile or ice, may have a COF as low as 0.10.

The most important protection is to wear the proper footwear for your work and environment. In the service industry, shoes or boots should provide three major types of protection.

- The soles and heels should be slip-resistant
- The toe of the shoe should resist crushing injuries
- The shoe should support the ankle.

Chevron or cleat-designed soles are definitely the best for slippery situations because of the suction or squeezing action they provide. The softer soles are better for slippery indoor conditions; the harder, more rugged, non-flexible sole is preferred for tough outdoor use. The figure below shows a boot with a soft rubber sole and heel with rubber cleats, thus a higher coefficient of friction.



Contributing Factors

Proper housekeeping in work and walking areas can contribute to safety and the prevention of falls. Not only is it important to maintain a safe working environment and walking surface, these areas must also be kept free of obstacles which can cause slips and trips. 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 trip over a misplaced object.

Behaviors that Lead to Falls

In addition to wearing the wrong footwear, there are specific behaviors which can lead to slips, trips, and falls. Walking too fast or running can cause major problems. In normal walking, the most force is exerted when the heel strikes the ground, but in fast walking or running, one lands harder on the heel of the front foot and pushes harder off the sole of the rear foot; thus, a greater Coefficient of Friction is required to prevent slips and falls. Rapid changes in direction create a similar problem.

Lastly, other problems that can lead to slips, trips and falls are: distractions; not watching where one is going; carrying materials which obstruct view; wearing sunglasses in low-light areas; and failure to use handrails. These and other behaviors, caused by lack of knowledge, impatience, or bad habits developed from past experiences, can lead to falls and potentially severe injuries.