

Good Housekeeping Fosters Safety

OSHA Requires Clean Floors

Occupational Safety and Health Administration (OSHA) requires employers to provide a clean, safe work environment. Among these regulations, floor safety is addressed: "The floor of every workroom shall be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained, and false floors, platforms, mats or other dry standing places should be provided where practicable." [29 CFR 1910.22(a)]

ANSI Standard

Although the requirement to keep floors clean and dry has been in place for nearly three decades, (OSHA first published the regulation in 1974) and many building codes and consensus standards using the term "slip-resistant" have been written; no method existed to quantify what "slip-resistant" really meant.

In 2001, American National Standards Institute (ANSI) and the American Society of Safety Engineers (ASSE) jointly published ANSI/ASSE A1264.2-2001, Standard for the Provision of Slip Resistance on Walking / Working Surfaces.

This consensus standard details provisions for creating and maintaining safer work surfaces, and lists applicable American Standard Test Method (ASTM) standards for testing of various surfaces and footwear. According to the standard, the intent is to, "help in the reduction of falls due to conditions, which in some fashion are manageable." As with all ANSI standards, compliance is voluntary.

The principles contained within the document provide guidelines for floor safety and housekeeping that will benefit nearly every facility. The standard seeks to "set forth common and accepted practices for providing reasonably safe walking / working surfaces." According to their studies, slip and fall accidents can be associated with the following:

- Floor surface characteristics
- Footwear traction properties
- Environmental factors (water, oil or other contaminants)
- Human factors (gait, human activity)
- Psychological and physiological conditions of the walker

Because the last two factors are nearly impossible for employers and management to control, this standard addresses only the first three conditions. The major topics outlined in the standard are discussed below.

Footwear

Just as a ballerina could not perform well in a pair of goulashes, workers will not be at their best if they're in ballet slippers. In addition to any necessary safety features for compliance with OSHA standards (29 CFR 1910.136) such as steel toes, shanks, metatarsal protectors, etc., consider floor characteristics when choosing footwear.

As a general rule, smooth, leather soles provide little traction, especially on smooth or wet floors. Office workers, who may be accustomed to wearing dress shoes, can easily become victims of slip and fall hazards when they enter wet or slippery work zones — or even a smooth but dusty

concrete floor in the warehouse. If this is a possibility, consider posting signs or notices on office doors or at work area entrances to remind them of this potential hazard, or consider offering overshoes that can be slipped on to provide traction.

When selecting footwear, the standard suggests considering not only the slip resistance a shoe or boot will provide, but also the tread design, harness of the sole, shape of the sole and heel, abrasion resistance, oil resistance, chemical and heat resistance.

Mats and Runners

Marble, tile, linoleum, un-brushed concrete, treated wood: although each has a unique look and feel, they are all very slippery when wet. When it rains or snows, moisture is inevitably tracked in with workers. Placing mats or floor runners at building entrances helps remove excess moisture, which can lead to slip and fall accidents. According to the standard, "as a rule of safe practice, footprints or water prints should not be seen on the floor beyond the last mat of an entrance."

The longer the runner or entrance mat, the greater the likelihood that it will dry workers' feet before they step off of it.

Stairs can be another area of concern when inclement weather hits. If stairs are — or could become — slippery, consider applying non-slip paints, or grit-coated adhesive strips to increase traction.

Consider absorbent mats or runners for other areas of the facility as well. For example, absorbent mats can be used in aisle ways near machines that overspray; in process areas; or anywhere contaminants threaten to make a working / walking surface slick. Mats may be appropriate near water fountains, coffee areas, sinks, and "other areas where spills may occur and are part of the workplace."

Housekeeping

Stocking supplies and having a dedicated maintenance staff isn't enough. A written program detailing everyone's responsibilities must be created and implemented to maintain safe walking / working surfaces. "The program should describe materials, equipment, scheduling, methods and training of those conducting housekeeping" according to the standard.

If employees are not currently responsible for housekeeping, some may not be too excited to add housekeeping functions to their list of daily tasks. Combat this by providing a vivid picture of the desired outcome: no slip and fall injuries.

Even if training is a success, steps need to be taken to make it as easy as possible to perform these functions. Who has time to go running all the way across the building for a spill kit to absorb a spill at the loading dock?

Stocking spill kits, signs, mats and other supplies in spill-prone areas throughout the facility will help everyone do their part to clean up or at least notify others of hazards.

This training can often be incorporated into corporate HAZCOM (29 CFR 1910.1200) or Spill Response (29 CFR 1910.120) trainings, and is a great lesson for all employees, not just

maintenance or line workers. A coffee spill on the tiled floor in the executive offices can cause an accident just as serious as slipping on an oily floor near a drill press.

Warnings

Sometimes, unexpected events, such as a ruptured process feed line, or a roof leak after a major storm can create hazards; necessitating barricades, diverters or other forms of warning to keep everyone safe until the problem is corrected and the floor is again clean and safe.

According to the standard, "If a slip / fall hazard cannot be eliminated or until appropriate hazard control measure can be implemented, a visual hazard-alert warning message should be provided or access control of the area should be used to control employees entering the hazard area."

Stanchions, signs, warning tape or other forms of barricades can help define safe perimeters, especially in the event of a spill of hazardous materials. To contain spills, "scupper curbing, dikes, drip pans and operational enclosures" can be used to keep spillage out of walkways until trained employees can mitigate the spill and the area is restored to a safe condition.

Controlled Access

Train employees to know their limits. Although all employees should be encouraged to keep their work areas clean and dry to whatever extent is reasonable, unless they have been properly trained to do so, employees should not assist in hazardous spill cleanups.

Untrained employees, such as office workers or visitors, should also be prevented from entering hazard prone areas, such as wet processing lines, without an escort who has been trained to look for hazards and point them out to anyone who is being taken through the area.

Selection and/or Treatment of Surfaces

Improving the traction of a slippery floor is one way to reduce slip / fall incidents. Sometimes, this can be as simple as changing floor cleaning products. More often, though, it takes a little more effort. "Where it is not practical to replace flooring, etching, scoring, grooving, brushing, appliqués, coatings and other such techniques shall be used to provide acceptable slip resistance," according to the standard.

For concrete floors in work areas, non-slip paints can be applied to increase traction. These paints are available in many different grades and colors; and can be used not only in walking areas, but also on ramps, in loading areas, and in areas where harsh chemicals are handled. Most are also formulated to be easy to clean with common cleaning equipment, such as mops and floor scrubbers. In areas where you want the natural beauty of a floor to show; clear, non-abrasive coatings can be applied to the surface.

After coatings, finishes, etc. have been installed; cleaning plays a major role in determining whether or not the floor will maintain its desired properties. No finish will last forever, but improper cleaning lessens the life span of even the toughest floor preparations.

Using the wrong detergent, using too much detergent, using dirty mops, etc. can also contribute to less than desirable results. When in doubt, contact the manufacturer of the floor preparation for cleaning recommendations. In addition, see what the manufacturer of the cleaning chemicals

recommends. Both sources should be able to provide valuable insight into maximizing your floor investment.

Testing Equipment

To evaluate the slip resistance of footwear or a work surface, the standard lists ASTM test methods that may be used. It is important to choose the correct test method, because results from a dry surface test won't necessarily be valid or accurate if that surface becomes wet, and vice versa.

When testing, a coefficient of friction (COF) of 0.5 is considered to be a desirable result for general walking areas; however, a number lower than this does not necessarily mean that the floor is hazardous. Ramps, stairs and areas where more physical exertion is required may necessitate a higher COF.

Prepare Now

Taking the time to improve floor conditions now, and training workers to identify and rectify hazards in their work areas will go a long way toward a reduction in slip and fall injuries - saving the company money by reducing workers compensation costs and keeping workers healthy and on the job.

Karen D. Hamel is a technical specialist for New Pig Corp. She is a graduate of the University of Pittsburgh and has over 17 years of experience helping EHS professionals find solutions to environmental, health and safety issues. She is HAZWOPER technician level and NIMS certified, and serves in the Blair County, PA LEPC. She can be reached at 1-800-HOT-HOGS® (468-4647) or by email karenh@newpig.com.