



Slips and trips: The importance of floor cleaning

Slips and Trips 2

Introduction

Slips and trips are the most common cause of major injuries at work. Around 90% of these are broken bones. The costs to industry are substantial (over £500 million per year) and there is incalculable human cost and suffering to those injured. Floor cleaning is significant in causing slip and trip accidents, both to cleaning staff and others.

Legal actions following an injury can be extremely damaging to business, especially where the public is involved. Insurance only covers a small part of the cost.

Effective solutions are often simple, inexpensive and can lead to other benefits.

The most effective approach is to ensure that slips and trips hazards are designed out of a building. Consulting with the cleaners during refurbishment for example, can provide valuable information on the suitability of proposed flooring types and storage facilities for cleaning equipment.

This information sheet provides guidance on reducing slips and trips from cleaning activities and will be useful to those who:

- employ or supervise cleaners;
- manage cleaning contracts;
- manage premises where cleaning takes place (either in-house or contracted out);
- are involved in workplace health and safety, for example safety representatives.

Case study: Woman loses leg following two slip accidents

Alison was an occupational therapist in a large hospital when she had two slip accidents at work.

The first happened in 1986. Alison slipped on rotting leaves on the concrete steps of the hospital on her way in. The leaves were supposed to be cleared on a daily basis, but had not been because of staff shortages. She fell heavily on her right knee and was still in pain three months later, when she was told she needed surgery.

In 1992 she slipped again, this time on a wet vinyl floor. Someone had mopped the floor and failed to

dry it or put out any barriers or warning signs. She slipped and fell directly onto her right ankle. Over the next few years she faced 30 operations. Eventually she was told that the only solution was to have her foot amputated. Recently Alison had a 32nd operation when her leg was amputated at the knee.

As anyone can imagine, these easily avoidable accidents have had a horrendous effect on Alison's life. She was an active 21 year old who enjoyed dancing, aerobics and jogging. She cannot do any of these activities now and spends a lot of her time in a wheelchair.

Although she received extensive compensation, she has lost her job and will never work again because of ongoing problems. Alison said no amount of money can compensate for what happened to her.



Slips and trips and the cleaning industry

Floor cleaning is key in controlling many slip and trip accidents because:

- floor surface contamination (such as water, oil, dust) is often a cause of slip accidents. So, regular cleaning to remove contamination can reduce accidents;
- cleaning can present slip and trip hazards to those entering the area being cleaned, including the cleaners themselves. For example smooth floors left damp by a mop are likely to be extremely slippery and trailing wires from a vacuum or buffing machine can present a trip hazard;
- reported major accident figures show cleaning is high risk for slips and trips.

Where cleaning is carried out effectively, it can make the difference between a floor being an unacceptably high slip risk or an acceptably low slip risk.

Slip and trip accidents can be serious and costly. Floor cleaning can cause or prevent slips and trips – choose the right method. Simple, inexpensive measures can be effective.

When is someone likely to slip or trip?

Almost all slips happen when floors are wet or dirty (for example contaminated with water, oil, food debris, dust etc). If the floor has a smooth surface (for example the surfaces of standard vinyl, glazed ceramic tiles, varnished wood and some metal floors are all often very smooth) even a tiny amount of contamination can present a real slip problem. Trips generally take place on damaged, uneven and badly laid floors or because obstacles have been left where people do not expect to find them.

People rarely slip on clean dry floors. Floors in poor condition and bad housekeeping are responsible for most trip injuries at work.

What can be done to prevent slips and trips?

Control measures can be divided into:

- management systems;
- contamination control:
 - preventing contamination,
 - choose the right cleaning method,
 - make sure cleaning does not introduce an additional slip risk;
- obstacle removal.

All three are needed to prevent slips and trips.

Management systems

Slips and trips research has shown that cleaning processes are often poorly thought through; and cleaners are rarely involved in deciding how things are done.

Cleaning, as with other areas of health and safety, requires a good management system to help you identify problem areas, decide what to do, act on your decisions and check the steps have been effective. A good system should involve:

- planning to make sure the correct cleaning regime is chosen for the type of floor, taking into account how the floor is used, by whom (for example some people are more at risk such as visually impaired people, the elderly), when it's used and contaminants present. Consider also how spillages etc will be cleaned up between the scheduled whole floor cleaning;
- organising your work and consulting with staff to make sure the planning stage is implemented;
- control to ensure that working practices and processes are being carried out properly, for example access is prevented to wet smooth floors;
- monitoring and reviewing to identify any improvements that can be made to the system.

Effective communication is needed at all levels, such as with the:

- purchasing department to make sure you get what you need, for example equipment and materials;
- flooring suppliers, who should supply information on their floor and how to effectively clean it;
- equipment and chemical suppliers to ensure suitability of the product for the type of contaminant and floor;
- cleaning contractor and client to ensure the contract provides appropriate cleaning by trained cleaners. The contract should be reviewed if the work environment changes;
- cleaners who need to be consulted on their duties and why the cleaning needs to be undertaken in a particular way or at a particular time. Lack of understanding can lead to inappropriate shortcuts. They should also be informed of any changes.

Effective training and supervision is essential to make sure the standard of cleaning is correct. Training should match the individual, the environment and equipment used. If any of these factors change, training should be reviewed. Cleaners should be encouraged to report any difficulties in carrying out their work.

Floors and equipment should be well maintained.

Case study: Incorrect technique, increased risk!

Health and safety managers at a busy railway station knew that spillages on their shiny new floor could cause slip accidents if they weren't dealt with immediately. Their solution to this problem was to employ a roving cleaner who patrolled the station concourse. A spillage of water from the fresh flower stall was notified to the cleaner and he arrived at the scene very quickly.

He parked his cleaning trolley about 10 metres from the spill. As he walked to the spillage water dripped from his mop. But the dripped water from his mop was just as likely to cause a slip accident as the spillage itself! Once he got to the spillage he wiped over the area and a bit further with his mop. Unfortunately this increased the slip hazard even more, because it was no longer a small spill everyone could see, but a large area of wet, smooth floor.

Tiny amounts of water (often almost invisible) on a smooth floor can cause a slip. He could have parked his trolley next to the spill and wiped it up with some absorbent material to leave the floor dry.

The cleaning technique had not been well thought through. Training and supervision were inadequate.



Contamination control

People rarely slip on a clean dry floor. There is contamination involved in almost all slip accidents. It can be introduced by the work activity or in fact by the cleaning activity itself.

Preventing contamination

The best method is to prevent contamination of the dry floor. Spot cleaning is a useful technique to clean up spills etc as they happen, especially between whole floor cleaning. You need to consider who is best placed to do the spot cleaning, for example those working in an area or dedicated cleaners. Further information on spot cleaning is given in 'Choosing the right cleaning method'. At entrances, enclosed holders for wet umbrellas and effective well-maintained matting can stop the floor getting wet. If contamination is walked beyond the matting, can it be improved?

Choosing the right cleaning method

To effectively remove contaminant, the correct cleaning regime needs to be chosen. Consider the factors below when choosing the cleaning technique.

Detergent - is essential if there is any greasy or oily contamination on the floor. Water on its own, whether it is cold or warm, is not effective in removing this kind of contamination. The concentration of detergent is critical to its effectiveness. Follow the manufacturer's instructions, because too strong a solution can be as ineffective as too weak. Monitoring how much is used can be a useful check. Dosing systems can eliminate error. The detergent should be left on the floor for enough time to allow effective removal of grease before rinsing. A useful comparison is washing-up, heavily soiled pots and pans require soak time in the detergent. Scouring or brushing can increase the effectiveness of detergent.

Spot cleaning - using a paper towel or rag to remove small areas of water-based contamination from the floor. This is a cheap and effective method of removing water-based spills. It avoids spreading the contamination or increasing the slip risk by mopping a large area. Spot cleaning can be used between scheduled whole-floor cleaning to control contamination. For greasy spills, detergent will be required.

Mopping - is usually only effective on smoother floors because it only skims the surface of the floor, regardless of the effort used. Even a well-wrung mop will leave a thin film of water which is enough to create a slip risk on a smooth floor. Subsequent use of a dry mop will reduce the drying time but will not eliminate the slip risk. Where smooth floors are mopped, take care to make sure the floor is left to dry completely

before pedestrians are allowed access. Consider how dirt is removed from the floor and where it goes. For example use a separate dirty water bucket for wringing the mop out to increase the dirt removal. Greasy floors require contact time with the detergent solution, for example use an immersion mopping technique, where the detergent is put down in one stage, and mopped up after a soak time in a second stage.

Sweeping brush - on a smooth floor may be adequate to remove dry contaminants. Airborne dust can be created, so this technique should not be used where there are health risks associated with the dust, for example flour, sawdust.

Hose/power washer - with sufficient power can be used to remove dusty or doughy contaminants. The floor will be left wet, so should be rough enough not to create a slip risk with the water left behind. Suitable drainage will be required. For greasy contamination, detergent will be required.

Squeegee - can be effective in removing excess water after cleaning, to reduce drying time. The floor will not be left dry and will still present a slip risk. If a floor is rough enough to be left wet, the volume of water is not important and a squeegee is unnecessary. Where oily or greasy contamination is present, the squeegee can have the effect of spreading a thin layer of contamination over a wider area, or forcing it into the surface. This may result in a floor that is more difficult to clean.

Wet vacuum cleaner - effective at cleaning up liquid spills. This is more effective on smooth floors which can be left completely dry.

Dry vacuum cleaner - effective at cleaning up dry/dusty contaminants. This is often effective on rougher floors. It avoids the creation of airborne dust. If the dust creates a health risk, make sure the filter is suitable.

Scrubber-drier machines - can be an effective way to clean most kinds of flooring. Different designs of scrubber-drier lend themselves to different situations. The squeegee needs to be wide enough to recover all the water put down by the scrubber-drier. Single scrubber machines tend to throw water out to one side, and may require an asymmetric squeegee to recover this. The squeegee needs to be well maintained to ensure there is no leakage, which may, for example leave a smooth floor dangerously wet. On very rough or profiled surfaces the squeegee may not be flexible enough to allow adequate removal of water from the surface. On greasy floors a detergent should be used to remove and hold the oil or grease in the water. The operator should be trained in the correct use of the machine, for example using the appropriate level of water for the floor surface, to reduce leaking and water trails.

Case study: Cleaner identifies problem with cleaning equipment.

A cleaner in a food factory noticed that although a scrubber-drier was being used at a reasonable frequency, it was not removing the greasy contamination from the floor, making the floor slippery. The issue was reported to the cleaning supervisor who looked into the problem in more detail and found that the wrong concentration of detergent was being used. It had become custom and practice to use one capful of detergent in the scrubber-drier, which was far below the manufacturer's recommendation. In addition, the supervisor observed that there were some maintenance issues with the scrubber-drier - the squeegee was in a poor condition, so it did not effectively remove water from the floor. The scrubber-drier was repaired, preventative maintenance implemented, and training provided to the cleaners. Once the manufacturer's recommended detergent concentration was used, there was a rapid improvement in the quality of the floor cleaning, because the grease was now removed. This case study shows the importance of management systems, training and communication.

Make sure cleaning does not introduce an additional slip risk

A smooth wet floor creates a slip risk. People often slip on floors that have been left wet after cleaning. Mopping is one of the main causes of floors being left wet after cleaning. However, other cleaning techniques can also leave the floor wet, for example a poorly maintained squeegee on a scrubber-drier.

Where the current cleaning technique results in a smooth floor being left wet after cleaning you should:

- consider alternative cleaning techniques that leave the floor dry;
- if alternative cleaning techniques are not going to work in your premises, you need to ensure the floor is left to dry completely before pedestrians are allowed access.

To restrict pedestrian access to drying floors, the following techniques are available. Techniques at the top of the list are considered to be more effective than those at the bottom of the list. A combination of different techniques may be required to make sure methods of preventing access during drying are effective.

- Clean during quiet hours, when pedestrians are not around.

- Physically exclude people from wet cleaning areas, for example using physical barriers or locking off an area while the floor is wet. Provide information on alternative routes. The 'exclusion' should be removed once the floor is dry so it continues to be effective.
- Clean in sections, so there is a dry path through the area.
- Use warning signs. Consider using cones etc carefully, because they only warn of the hazard. Provide information on alternative routes. Cones:
 - do not prevent people from entering the area where they may slip;
 - often poorly demark the extent of the area where someone may slip;
 - are frequently left in areas that are clearly not being cleaned or are already dry, so people ignore them and they lose effectiveness.

Warning signs can be an effective means of informing people of a spill before it can be cleaned up, especially if the spill is visible, indicating the sign is being properly used and, critically, the sign is removed once the area is safe.

Stairs are a particularly hazardous part of the building and become even more so when being cleaned. The potential for a slip or trip applies to both the cleaner and the stair user.

During the course of their work cleaners may be exposed to slip risks. Controls should ensure risks are minimised, for example by the sequence in which cleaning is undertaken and the cleaning techniques used. Appropriate slip-resistant footwear can also help reduce the slip risk to cleaners themselves. Footwear provided as personal protective equipment must be free to employees.

Contamination should be removed effectively and appropriately.
Smooth floors should not be left wet, if people have access.
Warning signs such as cones are generally ineffective because they are not used properly.

Obstacle removal

Obstructions and objects left lying around can easily go unnoticed and cause a trip accident. These causes are frequently overlooked, but generally easy to remedy.

Potential trip hazards associated with cleaning and possible control measures to reduce the risk to cleaners and others are given below.

Cables and leads - from cleaning equipment such as scrubber-driers and vacuum cleaners. The use of battery-operated equipment avoids trailing cables.

Where possible cleaning should be undertaken during quiet times or outside normal work hours to reduce the likelihood of people tripping over equipment and cables. If cleaning has to be carried out when there are people in the vicinity, ensure staff and others are made aware that cleaning is in progress, for example by using effective signs or barriers. Where the use of a cable is unavoidable, minimise the operating length (for example by using a closer socket), increase its visibility, cover it or move it out of the way of pedestrians (for example by using overhead cables). Disconnect and tidy away equipment after use.

Rubbish - for example discarded boxes, waste materials, bin bags. Safely remove and dispose of any waste items that may cause a trip hazard. Avoid temporary trip hazards by not leaving unattended rubbish in walkways.

Uneven floors - For example curling mats, peeling or missing carpet tiles, holes, and changes in level. Cleaners and supervisors should report any flooring defects or unmarked changes in level to the occupier. Occupiers should put systems in place, which make it easy for cleaners to report defects.

Lighting - poor lighting can increase the risk of trips, as obstacles may not be clearly visible. Cleaners and supervisors should tell occupiers about areas where the light is poor or bulbs are missing or blown.

Housekeeping - inform occupiers about housekeeping issues, for example workers leaving clutter around workstations, which create trip hazards for cleaning staff. The same applies to spillages, for example leaking machinery, spillages from vending machines and leaking roof lights. Make sure cleaning equipment is not left unattended and is safely stored when not in use. Somewhere should be provided for the storage of cleaning equipment and warning signs, barriers etc.

What the law says

The Health and Safety at Work etc Act 1974 (HSW Act) requires employers to ensure the health and safety of their employees and others who may be affected by their work activity. For instance, contractors have a general duty towards their client and vice versa. It also requires employees not to endanger themselves or others and use any safety equipment provided.

The Management of Health and Safety at Work Regulations 1999 build on the HSW Act and include duties:

- on employers to assess slip and trip risks to employees and others who may be affected by their work activity and take action to control these risks;

- on those who employ cleaning contractors in their premises to make sure the contractors are given information on health and safety in those premises.

The Workplace (Health, Safety and Welfare) Regulations 1992 require floors to be suitable for the purpose for which they are used and free from obstructions and slip hazards.

The Provision and Use of Work Equipment Regulations 1998 require work equipment (for example scrubber-drier, mop) to be well maintained, the selection of suitable equipment and the provision of training in its use.

The Safety Representatives and Safety Committees Regulations 1977 and The Health and Safety (Consultation with Employees) Regulations 1996 require you to consult your employees on matters to do with their health and safety at work.

This is not a full and definitive description of the law that may apply and there may be other duties.

Further information

HSE produces a wide range of documents. Some are available as printed publications, both priced and free, and others are only accessible via the HSE website, www.hse.gov.uk.

HSE priced and free publications are available by mail order from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA Tel: 01787 881165 Fax: 01787 313995 Website: www.hsebooks.co.uk (HSE priced publications are also available from bookshops and free leaflets can be downloaded from HSE's website: www.hse.gov.uk.)

For information about health and safety ring HSE's Infoline Tel: 0845 345 0055 Fax: 0845 408 9566 Textphone: 0845 408 9577 e-mail: hse.infoline@natbrit.com or write to HSE Information Services, Caerphilly Business Park, Caerphilly CF83 3GG.

This document contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

HSE would like to thank the Working Group from the HSE Cleaning Industry Liaison Forum for their input into the production of this information sheet.

This document is available web only at www.hse.gov.uk/pubns/web/slips02.pdf

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