Personal Injury Liability and Absence Reduction

Level 6 Certificate in Personal Injury Liability and Absence Reduction

Sample pages
Chapter 12

Slips and trips

including research skills

Study time:

Text and activities: 8 hours
Online activities: 2.5 hours

Learning objectives:

• Understand the mechanisms resulting in slips and trips
• Understand the various methods of risk control for these hazards
• Evaluate existing controls against statutory and civil law duties
• Develop operational and strategic level procedures to reduce the incidence of accidents and successful civil claims
• Devise and undertake research on a technical aspect of risk control
• Analyse a range of information obtained from technical research
• Produce accurate and proportionate written actions

Introduction

Slips and trips are one of the biggest causes of injuries to employees in Great Britain. They are responsible for 42% of all serious injuries, and are the second biggest cause of accidents resulting in lost time of more than seven days - responsible for about 28% of over seven day absences.¹

According to the Labour Force Survey, the average absence arising from a slip or trip accident was 8.7 days, and so spending a reasonable amount of effort, time and money to prevent just one accident can have a noticeable impact on absence rates and associated costs.

However, injury statistics from RIDDOR - the mandatory reporting legislation for employers - and also from the UK Labour Force Survey - which has a much higher accuracy - do not tell the full story.

A significant cost of accidents to employers result from civil claims, as we have seen. Whilst manual handling and stress claims normally only result from employees themselves, slips and trips civil claims are rather different.

Many people who are injured by slips and trips are not employees, but members of the public or other visitors. Where this occurs on property under the control of an employer, this will generally only be reported to HSE where it is a result of a work-related accident and an individual is taken directly to hospital for treatment for that injury. The extent of these injuries, and associated civil claims, are not recorded centrally, however anecdotal evidence suggests that they can easily be the biggest source of civil claims for larger employers, or those with lots of property and land to which the public have access - such as retail, leisure, local authorities, schools and hospitals.

Because of the number of accidents, injuries, lost time and financial loss arising from slips and trips, we have dedicated a significant proportion of this chapter to the study and control of these incidents.

Activity 1

We will look at a number of scenarios as we progress through this chapter. Before we begin, look at the scenarios opposite and on the next page. In each case, think about liability - do you think the employer / person in control of the property would be liable in each of these cases? Make a few notes on the reasons for your opinion, and also what other information you would like to know to make a more informed decision.

We will analyse these as we move through the chapter, and it will be useful to refer back to your initial thoughts to see if your instincts were correct.

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1 Office for National Statistics (2015) Estimated days (full-day equivalent) off work and average days lost per (full-time equivalent) worker and per case due to self-reported workplace non-fatal injury, by accident kind, for people working in the last 12 months, averaged 2012/13 - 2014/15 Available from www.hse.gov.uk/statistics/lfs/index.htm

2 Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013; Regulation 5
| Scenario | Initial thoughts on liability?  
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<td><strong>Ben is a 40-year-old male in good general health, who regularly uses his local swimming pool. One day, he finishes in the pool and walks towards the changing rooms. As he walks along a corridor between the poolside and the changing rooms, he slips and injures his back. There is water on the floor from other bathers who have walked to the changing rooms.</strong></td>
<td><strong>Other information you would like to know?</strong></td>
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| **Mena visits her local Starbucks for a coffee. She goes to the toilet, and as she turns to close the toilet door, she slips over, lands awkwardly, and breaks her little finger.**  
*There is a fair amount of water on the floor.* | | | | |
| **Anne is walking her six-year-old daughter to school one October. She enters the school grounds, and then follows the path around to the entrance to her daughter's classroom. This path passes beneath a number of sycamore trees, and the path is covered with wet, fallen leaves. She slips on the wet leaves and breaks her arm.** | | | | |
| **Grace, a 14-year-old, is eating a meal in the high school canteen. When she has finished, she gets up, and slips on a ketchup packet on the floor. She receives a deep cut to her head.** | | | | |
| **A few months later, a teacher in the same school walks through the canteen at 2pm. There is a chip on the floor, which the teacher does not see. She slips on the chip, and seriously injures her elbow. The cleaner has already cleaned the floor, and obviously also missed the chip.** | | | | |
| **Claire works in the office of a museum. One evening, she leaves work by the staff entrance, and slips on some ice. She breaks her kneecap. The weather has been bad for several days, and it has been snowing periodically since the previous night. The ground was gritted that morning, but those undertaking the gritting finished work at 2pm.** | | | | |
In each case, we will consider the following points as we progress through the chapter:

- Was there fault, and therefore civil liability on the employer?

- Compliance with the Workplace (Health, Safety and Welfare) Regulation 1992, and possible consequences of non-compliance.

- Should the employer have done more - even if there was no liability - and if so what?

- Consequences to the employer of these incidents.

A key focus of this chapter will be to look at the distinction between legal liability, and being able to successfully defend a civil claim - and the fact that these are different things.
Scenario - swimming pool slip

Ben is a 40-year-old male in good general health, who regularly uses his local swimming pool. One day, he finishes in the pool and walks towards the changing rooms. As he walks along a corridor between the poolside and the changing rooms, he slips and injures his back.

There is water on the floor from other bathers who have walked to the changing rooms.

Activity 2

Before we start to look at risk controls and legal duties, let us first look a little more deeply at the hazards and risks here.

What is the definition of “hazard” and “risk” in the context of health and safety? (If you have completed the NCRQ Certificate in Applied Health and Safety, these definitions should roll off your tongue.)

Thinking of these definitions in relation to this incident, try to identify the hazard and risk.
Discussion

There can be various definitions of hazard and risk, however the most commonly accepted definitions are:

Hazard - something with the potential to cause harm

Risk - the likelihood of harm occurring - often referred to as probability x consequence

So, in this scenario, what is the hazard? It may be tempting to suggest that the floor contamination was the hazard - this caused the fall. However, this was not the agent that actually caused the injury. The injury resulted from the collision of the body with the floor, and so the actual hazard in slips and trips injuries is gravity. Gravity is also the hazard in falls from height and falling object injuries.

The risk that we refer to in this scenario is the risk of injury as a consequence of slipping.

What does this matter? Most people would refer to the actual cause of the slip - the floor contamination in this case - as the hazard, rather than gravity. And this is quite acceptable, albeit technically incorrect.

But the key point to get across here is that the hazard we are dealing with is ubiquitous. It is present in every single place on earth at every single moment, whether at work or not. And because of that, it cannot be eliminated. We can, of course, try to reduce the incidence of gravity-related harm from occurring, for example by reducing the risks of slips and trips from occurring, but the hazard will always be present.

Mechanisms of slips

How do slips occur?

In general, gravitational hazards arise when a potentially unstable or unsecured object is involved in a damaging impact due to the manner in which gravity causes the object to fall to a lower level if the instability is realised or the object is dropped (eg when a tool is dropped from a height, or a person trips and falls). The damaging forces that might ensue when a fall is interrupted...
arise when the energy associated with the momentum of the falling mass is transformed into another form of energy, primarily through processes such as:

- **Absorption** (eg the body is punctured, crushed, lacerated, shaken or knocked off balance)

- **Deformation** of the body posture against either natural stiffness or muscle effort (eg when a person attempts to arrest a falling object using muscle power).

The magnitude of the forces associated with gravitational hazards is one of the key determinants of the risk of injury - the higher the forces, the greater the risk. The consideration of forces associated with (ie causing or resulting from) moving objects is referred to as *kinetics*.

The most relevant factor in determining the outcome of a fall is the *velocity* at the time of impact. Let us consider a typical person falling over.

The knee of a person who slips and drops onto that knee from an upright position on a level surface (as can occur when a foot slips backwards at toe-off) can be expected to impact with the surface at 3.0 to 3.4 m/s. This is because their centre of gravity can fall vertically through a distance of 0.45 to 0.60 m (knee height for 95% of females and 95% of males, respectively).

The buttocks of a person who falls backwards from an upright position on a level surface (as can occur when one or both feet slip forwards) can be expected to impact with the surface at 3.8 to 4.4 m/s. This is because their centre of gravity can fall vertically through a distance of 0.74 to 1.0 m (hip height for 95% of females and 95% of males, respectively).\(^1\)

But what does this velocity mean in practice? Well, fractures due to a fall onto an unyielding (hard) surface can occur at the following velocities:

- the lumbar spine - 2.4 m/s
- the feet and ankles - 3.5 to 4 m/s
- the skull - 4 to 7 m/s.

A fall through a vertical distance of only 300 mm is sufficient to result in the falling object attaining a vertically downward velocity of more than 2.4 m/s.

This demonstrates that bone fractures can easily occur as a result of slips and trips on level surface. The skull of an average male (1.75 m) hitting the floor is likely to be subjected to a velocity (5.8 m/s) which could cause a fracture of the skull.

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Back to the scenario. We are told that Ben slipped on the wet floor leading from the swimming pool. What exactly does this mean? What is a slip? We need to have a basic understanding of the mechanism of slips before we can look at prevention.

A slip occurs when the frictional force acting between the relevant part of the shoe sole or foot and the pedestrian surface is insufficient to either effectively overcome the usually brief period of horizontal movement of the foot (or micro-slip) during the heel-strike phase of walking, or to counteract the horizontal force involved in accelerating the body forwards at toe-off.

For slipping to be avoided, the available friction must exceed the maximum horizontal forces (or peak frictional demand) of the foot.

**Heel strike** is the most common part of the gait cycle for slips to occur. At this time, demand for frictional contact with the pedestrian surface is usually greatest, and when encountering a different (and possibly less slip-resistant) pedestrian surface is most likely.

However, slips can and do also occur at **toe-off**. In either case, if the slip is both sufficiently long and rapid, a loss of balance and fall is a likely outcome.

A loss of balance following a slip at heel strike generally results in the person falling backwards and landing on their buttocks or back (and sometimes on their shoulders or head), and also frequently involves impact with one or both hands thrust out behind (Figure 2). A slip at toe-off often results in the person initially dropping to their knee or falling with the trailing leg twisting beneath them (Figure 3).
Factors affecting slip risks

The complexities of causation of slips are not yet fully understood. For example, while some individuals might successfully walk across an extremely slippery (eg icy) surface, others wearing the same footwear would slip; also, some individuals would have success only on some occasions. In this ice example, the environment is an important factor, but it is not the only one.

Differences in gait between (and within) individuals may well be another factor. A large proportion of slips occur when there is some mismatch between pedestrian expectations about available friction and the level of friction that is actually available. Such mismatches can arise due to the following physical factors:

- A pedestrian surface that is inherently slippery (eg ice)
- A work area where lubricating contaminants are routinely present (eg water or another liquid, dust, larger objects such as ball bearings, beads)
- The casual presence of spills and contaminants (eg water tracked in to a building on a wet day, a spilt drink)
- A sudden change in floor surfaces (eg from carpet to polished timber)
- A change in gradient of the pedestrian surface (eg a ramp)
- Fine growth (eg moss on a pavement)
- Excessive speed of movement for a given situation (eg running, or turning sharply)
- Footwear that is inadequately slip resistant in a given situation.
The likelihood of slips (and trips) occurring in the presence of physical risk factors can also be affected by:

**Perceptual** issues including:
- Lighting level(s)
- Visual contrast – between different surfaces as well as between the pedestrian surface and a slippery contaminant
- The presence of glare
- Presence and / or appropriateness of warning signs.

**Cognitive** issues including:
- Expectation based on previous experience
- Attention partly / wholly focused on a task rather than just locomotion
- Momentary distraction
- Awareness of previous incidents
- Awareness of warnings.

**Physical** characteristics of the individual including:
- Physical impairment
- Impairment of vision and / or proprioception mechanisms
- Idiosyncratic gait
- Ageing factors.

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**The effect of age on falls**

With respect to ageing, it is likely that healthy adults of all ages slip at approximately similar frequencies. However, as ageing generally leads to deterioration in vision and proprioception as well as in strength and agility, middle-aged people will in general recover their balance after slipping (or tripping) less frequently than younger people, and older people will in general experience more falls than both young and middle-aged people.

In addition, factors such as a loss of bone density - also quite commonly associated with ageing - tend to combine in a manner that results in an older person being more likely to sustain injury than a younger person who experiences the same type of fall.

From a legal perspective, the increase in likely serious consequences of falls in older populations may lower the threshold when determining what control measures are reasonable.