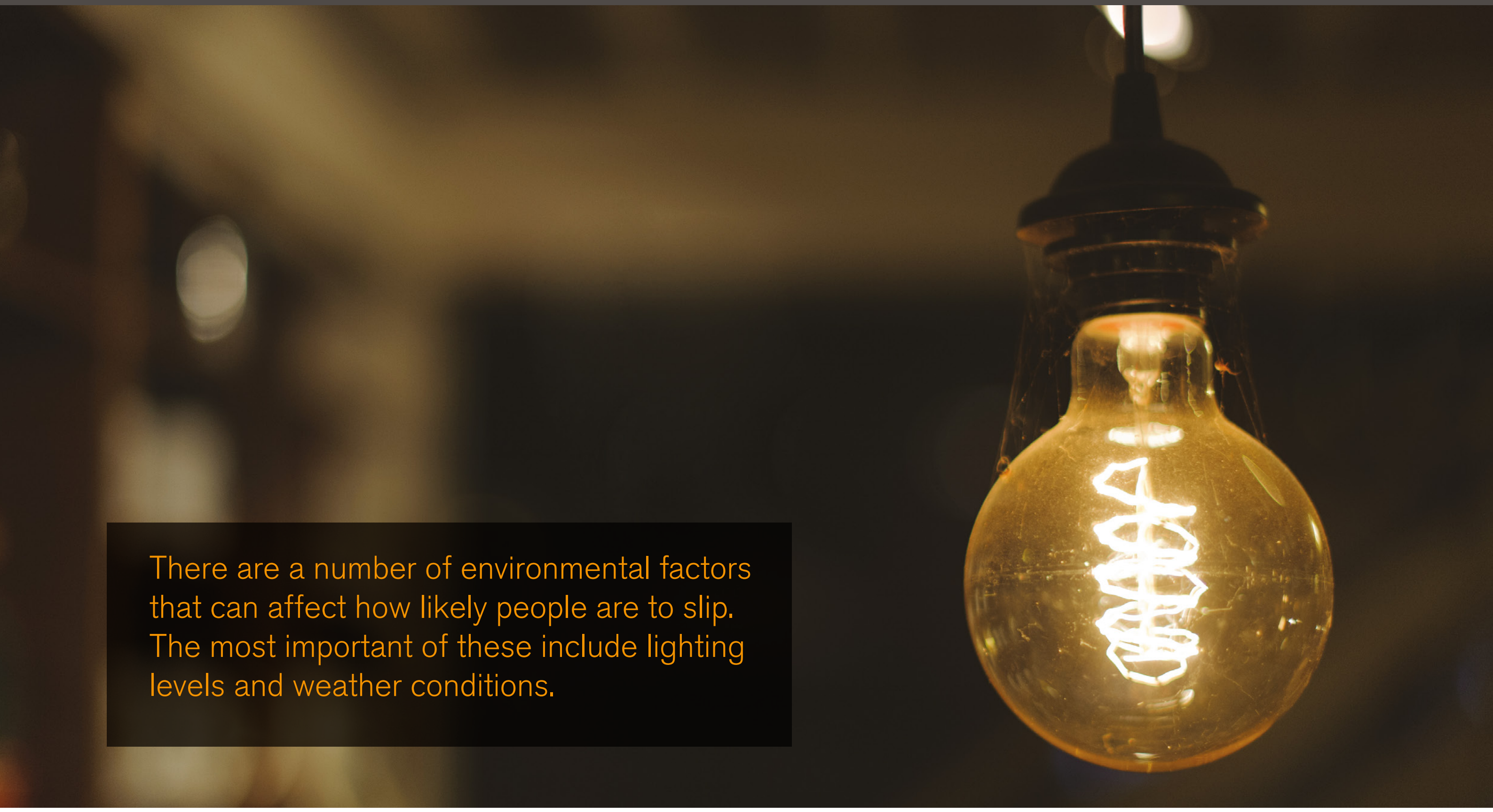
5.3 Preventing slips: Environment



There are a number of environmental factors that can affect how likely people are to slip. The most important of these include lighting levels and weather conditions.

Introduction

Lighting levels can have an impact on how people are able to spot hazards in premises and act accordingly.

Weather conditions can adversely affect underfoot conditions both indoors and outdoors.

The effective management of buildings, footpaths, car parks and grounds during bad weather has a significant impact on mitigating the risk of slips. Slip accidents increase during the autumn and winter season for a number of reasons: there is less daylight, leaves fall onto paths and become wet and slippery and cold weather spells cause ice and snow to build up on paths.

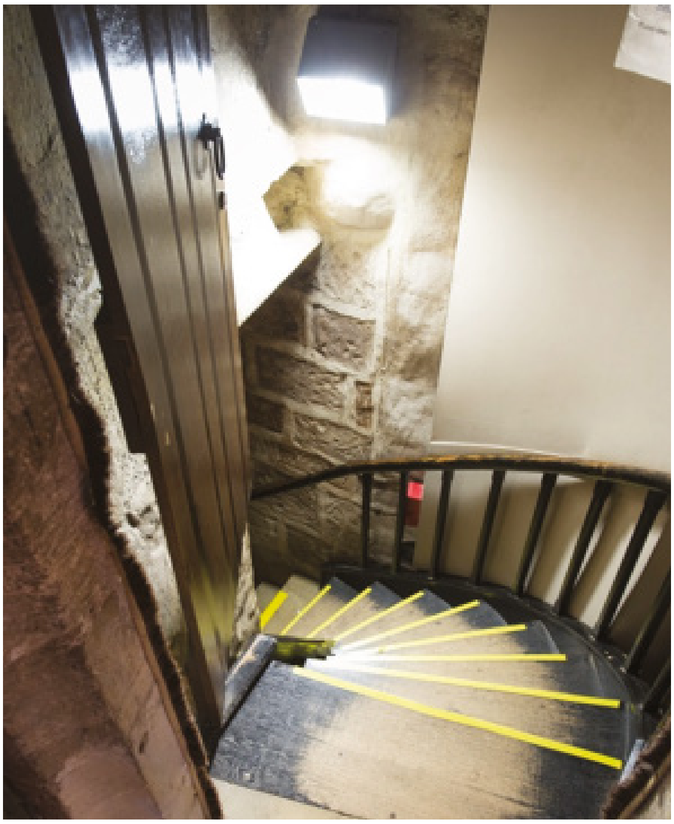
Best practice

These include:

Lighting

- **Provide lighting that meets the standards set out in Health and Safety Executive's (HSE's) publication 'Lighting at work', HSG38**. This document outlines good practice when lighting any work environment. It covers both the amount of light (or illuminance) required for different areas or activities and the need to avoid lighting that creates glare or shadows. It recognises the need for higher lighting levels in areas where hazards are present and for these to be readily visible.

- **Ensure that lighting levels are appropriate.** Ideally, lighting levels should be at least 50 lux on average (with no single reading below 20 lux). In areas where underfoot hazards are present, such as on steps and stairs, higher lighting levels will be needed (up to 150 lux). It is worth considering any variance in the lighting levels at different times of the day and year, as these can change markedly. Look out for darker areas caused by shadows where additional lighting may be required.



Higher lighting levels may be needed on steps and stairs.

- **Use a light meter.** Inexpensive light meters are readily available as are free light meter apps on smart phones. These apps can give a reasonable estimation of light levels. These tools can help as a useful guide, but be aware that they may not provide a 100% accurate result when compared to results from a professional assessment using calibrated equipment.

- **Be aware that lights on timer systems or sensors can cause problems** if they do not respond rapidly enough, or if they cut out with someone still in the related area.

Weather

- **Provide adequate lighting to ensure that employees and others are able to see and avoid hazards on the ground.** This is particularly important, during winter months with darker mornings and evenings. Here, it will be necessary to check all main internal and external routes that are used, both inside and out, as the effect of light changes during the day.

- **Remove wet and decaying leaves, moss and algae** at regular intervals as these can create slip risks in two ways; they can hide any hazard that may be on the path or they themselves present a slip risk.

- **Implement suitable precautions at building entrances to prevent a walk-in contaminant (e.g. water).** More information on managing building entrances can be found in module 5.5, Preventing slips: Contamination.

- **Implement suitable procedures to make access routes which are affected by ice, frost or snow, safe.** This will include identifying the outdoor areas used by pedestrians that are most likely to be affected; monitoring the temperature and weather forecasts to identify when adverse weather may affect access routes; gritting areas prone to be slippery in frosty or icy conditions; diverting pedestrians to less slippery walkways and cordoning off those that are unsafe; and keeping staff and visitors informed of which car parks and access routes are open.

Every year if the winter weather is bad, the question of who is liable if someone slips and falls on a pubic foot-path where snow or ice has been cleared is asked.

The Government provides information on this at www.gov.uk/clear-snow-road-path-cycleway

Challenges for historic properties

Many historic properties will not be lit to modern standards. In addition to this, light fittings in larger properties may be difficult to access from ground level. This makes changing the bulbs a time consuming and potentially dangerous task.

A common challenge is presented when lighting levels are kept low for conservation reasons. This is often encountered where there are delicate fabrics, paintings or other artefacts on display. Often, this is a particular issue on summer days as UV light can cause particular damage, with visitors finding that they may go from a well lit room into a dark one.

Some entrances will often lack suitable precautions to prevent water or other contaminants being walked-in particularly when the weather is bad.

In many cases, gritting or other winter precautions are the responsibility of volunteers who may not have received any training on what is expected in the different areas they are responsible for or why this is such a critical task.

Outdoor areas in many historic properties may not always be the responsibility of those occupying the site. For example, many footpaths and churchyards are managed by the local council. This can lead to conflicts in how the area is to be managed to ensure that it is safe. This may expose staff and visitors to risks that are not under the direct control of those managing the site. Where it is not clear who is responsible for managing an area, it is common for no-one to take responsibility and for its maintenance or safety standards to suffer.

Gritting

The most common method used to de-ice floors is gritting as it is relatively cheap, quick to apply and easy to spread. Rock salt (plain and treated) is the most commonly used 'grit'. It is the substance used on public roads by the Highways Authority.

Salt can stop ice forming and cause existing ice or snow to melt. It is most effective when it is ground down, but this will take far longer on pedestrian areas than on roads.

Gritting should be carried out when frost, ice or snow is forecast or when walkways are likely to be damp or wet and the floor temperatures are at, or below freezing. The best times are early in the evening before the frost settles and/or early in the morning before employees arrive. Salt doesn't work instantly; it needs sufficient time to dissolve into the moisture on the floor.

If you grit when it is raining heavily the salt will be washed away, causing a problem if the rain then turns to snow. Compacted snow, which turns to ice, is difficult to treat effectively with grit. Be aware that 'dawn frost' can occur on dry surfaces, when early morning dew forms and freezes on impact with the cold surface. It can be difficult to predict when or where this condition will occur.

Other possible solutions

These include:

- **Consider fittings that make changing bulbs easier and safer.** For example, using fittings that can be lowered to allow bulbs to be changed from ground level without the need to use ladders.
- **Fit LED bulbs where possible.** This can result in a significant financial saving as they last a lot longer than conventional bulbs. It also means that the light fittings need accessing less frequently to change the bulbs.
- **Where lighting levels are kept low for conservation reasons,** use localised lighting or other means of highlighting hazards (refer to relevant standards[1] if appropriate).
- **Implement and document a system of periodic checks** to identify and replace defective light bulbs and fittings.
- **Review the design of entrances to premises** and consider how matting or other precautions can be used to prevent the risk of walk-in contaminant (see module 5.5, Preventing slips: Contamination).
- **Identify outdoor areas used by pedestrians that are most likely to be affected by ice, frost or snow** e.g. building entrances, car parks, pedestrian walkways, shortcuts, sloped areas and areas constantly in the shade or wet.

[1]This could include PAS 198:2012, Specification for managing environmental conditions for cultural collections (this has been withdrawn but BSI advice it may still be relevant), or BS EN 16893:2018 Conservation of Cultural Heritage (Section 5.8: Windows and lighting).

- **Document and communicate your bad weather plans to staff and volunteers**, whilst monitoring local weather forecasts so that you can be proactive when snow or ice are anticipated. Ensure that you have stocks of grit for footpaths and car parks.
- **Implement precautions** (such as the use of barriers or cones) to divert pedestrians to less slippery walkways.
- **Consider the provision of slip resistant footwear or overshoes** for staff or volunteers involved in clearing or gritting icy surfaces (see module 5.6, Preventing slips: Footwear).
- Where other organisations (e.g. local councils) manage surrounding outdoor areas and footpaths used by site visitors and staff, **make sure both organisations have a clearly documented understanding** of who is responsible for maintaining which area. Report any issues quickly to ensure that they can be dealt with in a timely manner.
- **Highlight challenging outdoor areas** where bad weather increases the risk of slipping; in your visitor information or access documentation so that people are aware of potential risks and the precautions to be taken.

Any precautions for outdoor areas should be subject to appropriate checks and proper maintenance.

Need to contact us?

For further advice Ecclesiastical customers can call our Risk Management Advice Line on **0345 600 7531** (Monday to Friday 09:00 to 17:00, excluding Bank Holidays) or email us at **risk.advice@ecclesiastical.com** and one of our experts will call you back within 24 hours.

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