# Slips and Trips Policy

## Introduction

Slips and trips are the single most common cause of injuries in workplaces. Slips and trips also account for over a half of all reported injuries to the public. 95% of reportable major slips result in broken bones. It is therefore important that the University puts in place management systems to eliminate or minimise risks from slips and trips. This risk must also be considered during planning, construction and refurbishment or any changes of use within buildings.

The reduction of injuries from slips and trips can only be achieved when managers, staff and students are committed to taking personal responsibility. This policy aims to achieve this and sets out responsibilities for individual roles.

## Policy statement

The University will:

- provide a safe working environment for staff, students and visitors which is free from slip and trip hazards, so far as is reasonably practicable.
- adequately control or reduce the risk of slips and trips, by a combination of a safe environment and safe behaviour.
- ensure that appropriate risk assessments and risk reduction methods are in place.
- encourage all staff and students to take personal action to reduce the risk of slips and trips as far as possible.
- ensure that there is an effective response to changing conditions such as weather and the environment e.g. during construction works or refurbishment.
- ensure that University premises are designed and maintained to minimise the risk of slips and trips.

Professor Christine Williams
Pro-Vice-Chancellor
Chair, University Health and Safety Committee

Date June 2010

# Slips and Trips Procedures

## Staff responsibilities

- Staff will be made aware of policies and procedures relating to slips and trips in their work area, and are expected to follow them.
- Staff will take an proactive role in preventing slips and trips by:
  - taking action to remove slip and trip hazards from their work area e.g. cleaning up spillages, rerouting trailing cables etc.
  - maintaining a tidy office/work area.
  - reporting any defects to their line manager or directly to Facilities Management Directorate.

## Key roles and responsibilities for Health and Safety Services

Health & Safety Services will:

- Develop policies, procedures and guidance on managing slip and trip risks.
- Raise awareness through targeted communications.
- Monitor trends from accident statistics and highlight to the relevant Schools / Directorates.
- Investigate major accidents involving slips and trips and make recommendations for improvement to appropriate parties.
- Monitor compliance with this policy though regular audits.

## Key roles and responsibilities for Managers

Heads of the Schools/Directorates/ Units will ensure that:

- Risk assessments are carried out for the management of risks from slips and trips in their School/Directorate/Unit and that this is recorded (see example risk assessment on H&SS website).
- The risk assessment will include suitable control measures to eliminate or minimise the risk of slips and trips. This would include:
  - checking surfaces are in good condition
  - reducing floor contamination
  - defining an appropriate footwear policy where necessary (e.g. laboratories, kitchens and where external work is carried out)
  - checking that lighting is adequate.

- All relevant staff are made aware of the risk assessment and what is expected of them.
- Areas that they control are inspected for slip and trip hazards at least twice annually e.g. as part of workplace inspections, and that corrective action is taken where necessary.
- Any incidents involving slips or trips or near misses are reported and investigated.

- They lead by example by following policies and good practice, challenging inappropriate behaviour and dealing with issues regarding slips and trips.

## Key roles and responsibilities for Facilities Management Directorate (FMD)

### Maintenance Services Department (MSD)

Maintenance Services will:

- Implement an action plan for dealing with unsafe conditions arising from:
    - holes, bumps and uneven or worn out surfaces on paths and roads.
    - snow, ice and leaves on external paths and road.
    - inadequate drainage systems.
    - defective matting and flooring surfaces within common areas of buildings.
- All MSD staff will apply good housekeeping standards and make appropriate use of barriers during works on campus.

### Projects Team

Members of the FMD Projects team will:

- Ensure that specifications for new or replacement floors are for a material that is suitable for limiting the risk of slips and trips.
- Ensure that the design of buildings prevents contamination of floors, as far as reasonably practicable e.g. rainwater ingress is limited by the provision of suitable protected entrances and the provision of fixed matting.
- When selecting flooring, give consideration to the following guidance:
    - Health and Safety Executive (HSE) guidance on the selection of walking surfaces – see Further Information.
    - CIRIA guide C652 Safer surfaces to walk on reducing the risk of slipping.
- When selecting flooring, give consideration to:
    - the flooring material
    - likely contaminants
    - use of the area
    - predicted user behaviour
    - the surrounding environment and overall design of the space
    - the footwear likely to be worn.
- Follow the procedure set out in Appendix 1 when specifying flooring for new projects or major refurbishments.
- Ensure that contractors apply good housekeeping standards and appropriate use of barriers when working on campus to prevent slips, trips and falls.

## Campus Services

Campus Services will ensure that:

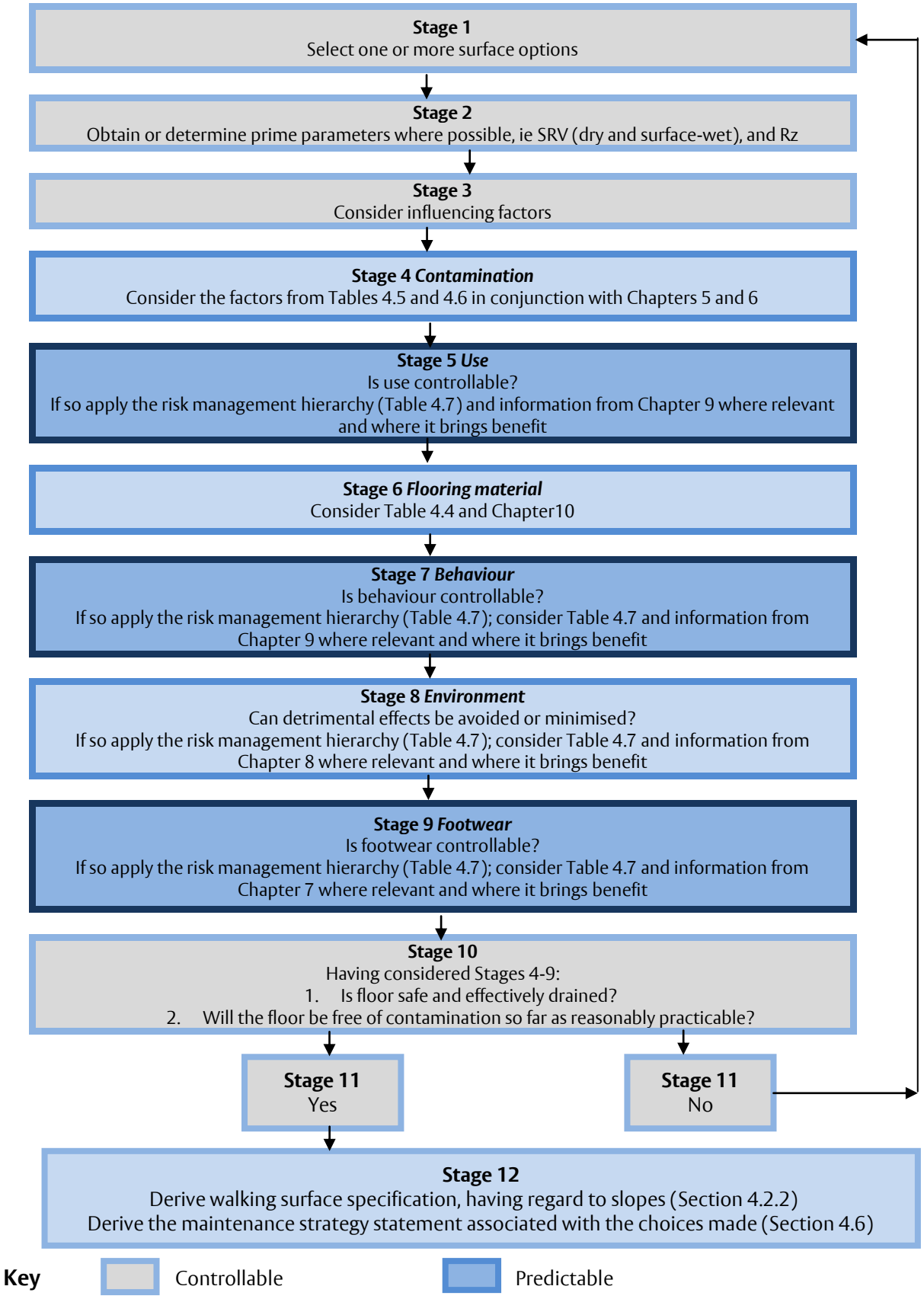
- An appropriate risk assessment is carried out for the management of risks from slips and trips arising from cleaning activities.
- Staff are trained in suitable safe systems of work, including:
    - preventing access when wet floors are drying
    - cleaning at appropriate times to minimise any risk to building users from wet floors
    - the correct cleaning methods for flooring types and use of chemicals
    - the safe use of electrical power and extension leads and other equipment that might cause a trip hazard.
- Staff are adequately supervised to ensure that safe systems of work are followed.
- Centrally booked rooms are maintained in a condition that will reduce the risk of slips and trips.

## Further information and HSE guides

1. CIRIA Guide C652 Safer surfaces to walk on reducing the risk of slipping. 2006.
2. Slips and Trips: Guidance for employers on identifying hazards and controlling risks - HSE Books (HSG 155) (ISBN: 0 7176 1145 0 ) (1996)
3. Slips and Trips: Guidance for the food processing industry - HSE Books (HSG 156) (ISBN: 0 71 ) (1996)
4. Assessing the slip resistance of flooring. HSE Technical Information Sheet 03/07. http://www.hse.gov.uk/pubns/web/slips01.pdf
5. Slips and trips: The importance of floor cleaning. HSE Information Sheet 09/05. http://www.hse.gov.uk/pubns/web/slips02.pdf
6. Preventing slips and trips at work. INDG225(rev1). 2005. http://www.hse.gov.uk/pubns/indg225.pdf
7. Preventing slip and trip incidents in the education sector. HSE Education Information Sheet No 2 (revised) EDIS2(rev1) 09/06. http://www.hse.gov.uk/pubns/edis2.pdf
8. www.hse.gov.uk/slips/information.htm

# Appendix 1 Assessing the slip resistance of flooring

When specifying new flooring the guidance contained in CIRIA publication *'Safer surfaces to walk on'* should be followed. This includes the following decision making process:



## Stage 1 Selection of surface options

This will normally be led by the architect, designer and Project Manager, in consultation with the end user.

## Stage 2 Obtaining prime parameters

It is essential that the correct information is available on the floor surface products likely to be used. This will enable the appropriate design decisions to be made based on established parameters. This will mainly consist of pendulum coefficient of friction test and surface microroughness. The likely contaminants must also be taken into consideration, and also features such as slopes.

The Health and Safety Laboratory (HSL) on behalf of the Health and Safety Executive (HSE) has developed a reliable and robust test method. The University of Reading supports these test methods. The methodology is based on using two instruments:

- Pendulum coefficient of friction (CoF) test
- Surface microroughness meter

### The Pendulum CoF test BS 7676: Parts 1-3, 2002

This gives a reading in slip resistance value (SRV) also know as pendulum test value (PTV) from high to low.

Table 1 Using Four-S rubber – average footwear

| Pendulum value (SRV) (Four-S rubber) | Potential for slip* |
|---|---|
| 0 - 24 | High |
| 24 - 35 | Moderate |
| 36 - 64 | Low |

**Note: Slider 96 (Four S)** - was developed as a hard shoe heel material and is still the primary test rubber when evaluating internal flooring materials for pedestrian use.

Table 2 Using TRRL rubber – bare foot conditions

| Pendulum value (SRV*) (TRRL rubber) | Potential for slip* |
|---|---|
| 0 -19 | High |
| 20 - 39 | Moderate |
| 40 – 74 | Low |
| 75+ | Extremely low |

**Note: Slider 55 (TRRL rubber)** - was developed as a soft tyre compound to asses the skid resistance of roads but is now used to simulate the soft sole of shoe material found on "Trainer" type shoes and has been used as a substitute for skin when evaluating swimming pool surrounds.

### Surface microroughness meter

Surface roughness can be used to supplement pendulum test data. The roughness results should be interpreted using the information reproduced in Table 3 (from UKSRG, 2005). Where only roughness data is available then the HSE Slips Assessment Tool (SAT) should be used. This will take account of other factors which affect the likelihood of slips and trips and will provide a High, Moderate or Low score.

Table 3 Surface roughness and slip potential

| Rz surface roughness (microns) | Potential for slip* |
|---|---|
| Below 10 | High |
| 10 - 20 | Moderate |
| 20 or above | Low |

### Wet contaminants

Minimum roughness for various contaminants has been established by Lemon and Griffiths on behalf of the HSE. This should be taken into consideration when specifying floor for particular environments:

Table 4 Recommended minimum roughness for various contaminants (Lemon and Griffiths, 1997)

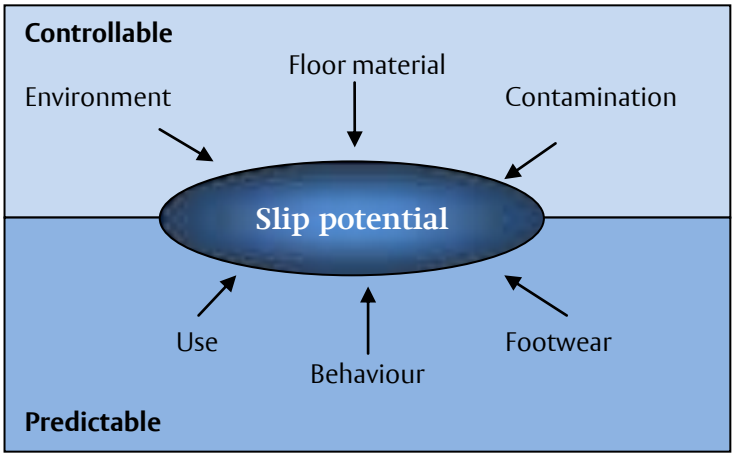
| Minimum roughness (Rz)(μm) | Contaminant | Viscosity (centipoise (cP)) |
|---|---|---|
| 20 | Clean water, coffee, soft drink | 1 |
| 45 | Soap solution, milk | 1 – 5 |
| 60 | Cooking stock | 5 – 30 |
| 70 | Motor oil, olive oil | 30 |
| Above 70 | Gear oil, margarine | 30 |

### Dry contaminants

The pendulum test data should be used for assessing the effects of dry contamination on surfaces, although where this is carried out an adapted method must be used. Where the contaminant is likely to be dry it may be difficult to rely on the data.

## Stages 3 – 9 consider the influencing factors

All of the influencing factors need to be considered, in addition to the data provided on the floor surface material.




## Stage 4 Contamination

The types of contamination which may be present should be identified. This should also include potential future use, where this can be identified. e.g. the installation of café areas in foyers. Contamination may be from water, grease, dust, food product or waste material. This can be the result of spillages, leaks, footfall or cleaning.

## Stages 5 & 7 Use and behaviour

The use of the floor surface must be considered. This will include general walking, carrying items, pushing and pulling items, persons in a hurry, elderly persons , young persons, persons with a disability. Issues such as the area being used for dancing, social events and sale of alcohol must be considered. The behaviour of people using the floor surface needs to be considered, and whether or not behaviour can be controlled. If the area is open to the public this may be difficult.

## Stage 6 Flooring material

There are more issues to consider when selecting a floor, in addition to the slip resistance. Table 5 below sets these out and is taken from the CIRIA guide.

Table 5 Factors to be considered when selecting flooring materials

| Attribute | Comment |
|---|---|
| Cost | A floor surface with a higher SRV may be more expensive than an alternative with a lower SRV, but, with appropriate caution, it might allow a less strictly controlled cleaning regime. This emphasises the whole-life costing approach that should be adopted where possible. |
| Appearance | A smooth, shiny surface might look impressive but its low micro-roughness may demand a more frequent cleaning and maintenance regime or one that does not leave any residual liquid on the surface. There may be a significant risk of disruption (eg employee absence or civil action) as a consequence of slips, arising from a failure to ensure appropriate cleaning. |
| Wear / durability | A harder surface will maintain its surface roughness longer than the softer alternative.<br>Some surfaces improve with wear, and other surfaces degrade with time and usage.<br>Aesthetically pleasing surfaces can be achieved using materials with higher SRV and Rz values.<br>Note: all surfaces will wear but how this affects the slip resistance is unpredictable. The only way to be sure is to measure the SRV over time, using the pendulum test (in conjunction with surface roughness measurements as a useful complementary means of monitoring). |
| Maintenance | The floor surface should be chosen with the use, any legal requirements for cleanliness and the desired maintenance regime in mind. |
| Consequences of falls | All floors need to be safe, but where a history of civil action or incidents would seriously damage the occupier's image it may be worthwhile to specify a solution that errs on the cautious side. |

## Stage 8 Environment

Consider how detrimental effects can be minimised or avoided. Overall design must be considered to reduce contamination as much as possible. One example of this would be the provision of suitable canopies and drainage at entrance ways, to prevent water being brought into the entrance of buildings.

Condensation can also lead to contamination, so this should be designed out as far as possible.

Lighting must be considered – the amount of light in an area can help people distinguish between areas which are contaminated or clean. Lighting will also have an impact on glare from the floor surface.

Visual distraction must be considered for issues such as changes in level - see chapter 8 of the CIRIA guide for more information.

Colour selection is important, in that a change in colour can have an effect on visual perception and the ability to see contaminants such as water.

## Stage 9 Footwear

Where there is no control over footwear such as in a public access building, this needs to be taken into account and the worst case scenario assumed. Where there is control over footwear then significant reductions in risk can be made - see Chapter 7 of the CIRIA guide for more information.

## Stage 10 Drainage

Having considered stages 4-9, the next step is to consider if the floor is effectively drained, and will the floor be free from contamination, as far as possible? If yes, move to surface specification, taking into consideration any slopes.

## Stage 12 Maintenance strategy

Derive the maintenance strategy statement associated with the choices made. The maintenance strategy should involve monitoring the SRV of the floor through the life of the asset. This will enable replacement or restoration of the SRV where necessary. The specifier should agree the maintenance strategy with the end user/occupier and Campus Services, if they are responsible for cleaning the area.

The statement should include the following:

### Physical characteristics

- Slip resistance parameters (SRV (dry and surface wet), Rz)
- Anticipated life of the floor product and limiting characteristics
- The locations where is anticipated the surface will require treatment after a period of use
- It may also be desirable to provide the design SRV under the worst contamination conditions envisaged if these differ from the surface wet values.

### Contamination issues

- Anticipated hazards
- The assumed cleaning regime and associated maintenance

### Other influences

- The design assumptions regarding other influencing factors, including environment, footwear, use and behaviour (where relevant)

### Management

- The anticipated maintenance regime (its type, frequency and methodology)
- Day to day management issues e.g. drying and cleaning of door mats
- Lighting issues

This statement will provide important information for those who have responsibility for the flooring surface during its lifespan.