

# PREVENTING SLIPS, TRIPS & FALLS

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## **DISCLAIMER**

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# **PREVENTING SLIPS, TRIPS & FALLS**

## **Who Needs to be Aware?**

Employers, self-employed persons, and controllers of workplaces (including owners of workplaces). and others who have an interest in occupational health and safety need to be aware of this topic.. Designers of workplaces should seek additional guidance on relevant technical issues for good workplace design from services.

## **Employers and Self Employed Persons**

Employers and self employed persons are accountable for managing the risks of slips, trips and falls on the same level. Managers should develop preventative measures, consult with relevant people, make sure that supervisors and workers understand safety procedures, and monitor the effectiveness of safety procedures. The Occupational Health and Safety Act 2000 (OHS Act) requires employers to consult with employees on all workplace health and safety matters.

## **Controllers of Workplaces**

Controllers of workplaces (such as owners) have obligations to ensure the health and safety of people accessing those premises. Clause 34 of the Occupational Health and Safety Regulation 2001 (OHS Regulation) requires the controller to identify hazards arising from the physical working environment, including the potential for people slipping, tripping or falling.

## **Employees and Other Workers at the Premises**

Information, instruction and training are important ways of ensuring workers follow the procedures that have been adopted to ensure safety.

## **Visitors Such as Customers, Clients and the Public**

All people entering the workplace need basic information about any risks and prevention measures.

## **Guide**

The OHS Act and the OHS Regulation require that employers and self-employed persons ensure the health and safety of all people in their workplaces. Controllers of workplaces (such as owners) also have obligations to ensure the health and safety of people accessing those premises. The OHS Act requires employees to cooperate in these efforts. The OHS Act provides that a contravention of the OHS legislation by a company is taken to be a contravention by each director of the company and each person concerned in the management of the company. Implementing the requirements under the OHS legislation includes due diligence in risk management, which is to identify, assess, control and monitor risks.

According to workers compensation data for 2004/05, total direct costs due to slips, trips and falls on the same level in NSW were about \$110 million. The average cost per claim was about \$18,900. NSW workers compensation statistics for slips, trips and falls on the same level for 2004/05 show that:

- about 5900 claims were made for serious injury or illness, which represent about 13 per cent of all injuries and illness claims
- about 58 per cent of injuries due to falls on the same level are sprains and strains of joints and adjacent muscles, followed by fractures (18 per cent) and contusion with intact skin surface and crushing injury excluding those with fracture (12 per cent).

The following shows that eight industries accounted for most (78 per cent) of the major claims due to slips, trips and falls on the same level during the period 2002/03 – 2004/05. (Manufacturing, Health & Community Services, Construction, Retail, Transport and Storage, Accommodation, Cafes and Restaurants, Property and Business Services, and Education).

- All other industries 22%
- Manufacturing 13%
- Health and Community Services 13%
- Construction 11%
- Retail Trade 10%
- Transport and Storage 8%
- Property and Business Services 8%
- Accommodation, Cafes & Restaurants 8%
- Education 7%

With an average cost to an employer of around \$18,900, one workers compensation claim for a slip, trip or fall on the same level incident can have a major impact on a business. In addition, there are the financial, physical and emotional costs to the injured worker and their family. A period off work and restrictions on the worker's usual home and leisure activities can have significant effects on their general well being.

The potential costs of public liability claims should be considered where visitors at the workplace could be injured.

### **RISK MANAGEMENT IN THE WORKPLACE**

Risk management is the process of hazard identification, risk assessment and risk elimination or control. The OHS Regulation provides general risk management requirements (Chapter 2).

There are many ways in which the workplace design and environment can cause slip, trip and fall on the same level hazards. There is plenty of scope for designing and maintaining the workplace in a way that will eliminate, or at least greatly reduce the chances of someone having a slip, trip or fall on the same level.

Follow the general risk management procedure using these steps.

- Identify hazards likely to cause slips, trips or falls on the same level by examining the premises and the work.
- Assess the risks these hazards create by working out how serious the problems are and how often the problems might occur.
- Eliminate or control the risks by making changes to protect people.

- Monitor and review.

The risk assessment process will give an opportunity to identify other hazards.

### **IDENTIFY WORKPLACE HAZARDS**

Every workplace needs to be examined so that all slips, trips and falls on the same level hazards are identified. To assist in determining exactly where slips, trips and falls on the same level have happened, or are likely to happen, there are three easy steps to follow.

- Consult with employees. Employers have a legal obligation to consult with employees when going through the steps of this process. For further advice on consultation and setting up consultation arrangements.
- Inspect the premises. Checklists may be helpful in identifying the sources of typical hazards. A slips, trips and falls on the same level checklist for a specific workplace can be developed. Start by making a list of the locations of concern. For each location, record anything that could be high risk. Ask employees for their input when preparing the checklist, as they will know about any potential risks from their experience of doing the task. Helpful information will be in records of previous risk assessments. See Appendix 2 for a checklist

Pay particular attention to the following:

- floors and grounds
- housekeeping and cleanliness
- cleaning and maintenance methods
- lighting
- stairs, ramps, sloping surfaces
- walkways
- tasks being undertaken
- footwear.

High risk areas are:

- where floors can become wet or oily
- where external grounds are slippery or are uneven
- sloping surfaces
- work areas where lifting and carrying tasks (and some other manual handling tasks such as pushing and pulling) are performed
- any area where the pace of work causes people to walk quickly or run
- high pedestrian traffic areas
- where there are constant changes to workplace conditions such as building sites
- unfamiliar locations such as patient or client homes
- accident locations that have not been secured and cleaned up.

Check records including incident and injury reports, near miss reports, workers compensation claims, and workplace inspection checklists.

### **RISK ASSESSMENT**

Having identified hazards, the risks arising from them should be assessed. Risk assessment involves determining the likelihood of an incident occurring, and the level of harm that could result. There is not likely to be a single cause for a slip, trip or fall on the same level, and each cause needs to be assessed.

It is important to set a priority for the elimination of hazards. For example, the provision of good slip resistant footwear alone is not sufficient protection against slipping on smooth floors with oil or grease on the floor. The first priority should be to avoid the spills. If this proves to be impractical, suitable slip resistant flooring should be installed. Good footwear is also part of the solution. The most serious risks need to be dealt with first.

The risk assessment should provide detailed evidence about what contributes or could contribute to incidents involving slips, trips or falls on the same level.

### **ELIMINATING OR CONTROLLING RISKS**

Use the risk assessment, in consultation with employees, to determine the best means of eliminating or controlling the risk. Document this information and conclusions in a risk control plan (see the example in the Risk Assessment and Control Plan at Appendix 3).

### **THE HIERARCHY OF HAZARD CONTROL**

The OHS Regulation requires that controls or solutions must be applied in a particular way, with the priority being to consider design or engineering controls that eliminate the risk. The following controls must be implemented in the order specified to reduce the risk to the lowest level of risk that is reasonably practicable.

#### **Hierarchy of Controls**

#### **Examples**

Eliminating the hazard creating the risk.

Remove slip, trip or fall on the same level hazards at the planning and design stage, or when renovating a facility.

Substituting the hazard creating the risk with a hazard that gives rise to a lesser risk.

Resurface floors, replace substances or equipment currently being used.

Isolating the hazard from the person put at risk.

Limit access to high-risk areas.

Minimizing the risk by engineering means.

Apply floor treatments. Contain spills, improve lighting, install handrails

Minimizing the risk by administrative means.

Adopting safe working practices.  
Providing appropriate training, instruction or information. Regular environmental workplace inspections. Monitoring of tasks undertaken. Regular monitoring of relevant records, data and statistics. Housekeeping and cleaning.

Using personal protective equipment.

Wearing appropriate footwear.

If a single measure is not sufficient, then a combination of the above measures must be taken to minimize the risk to the lowest level reasonably practicable for that purpose. For example, it is desirable to install the most appropriate slip resistant floor, have staff wear appropriate enclosed footwear with slip resistant soles, use cleaning methods that do not introduce a slip hazard, take action to prevent fluids spilling on the floor and promptly clean up spills if they happen. If hazards remain after a control is used then additional controls must be applied.

### **COMMON CONTROL MEASURES**

A control measure is something you do to reduce risk. It can be a process, procedure, or action that will eliminate or reduce the risk posed by specific hazards.

Control measures for risks identified should be developed and implemented in consultation with employees. During consultation with employees, attention should be given to hazard identification and risk controls in unfamiliar locations, for example when employees work off site, or at client's homes or offices.

#### **Workplace design**

Making design changes to the workplace can eliminate many slip, trip or fall on the same level hazards. The ideal way to eliminate the problem of slips, trips and falls on the same level is to design and build workplaces with safety and comfort in mind. When new facilities are to be built, or existing facilities upgraded, it is an opportunity to avoid many common hazards. When designing a workplace, identify potential slip, trip and fall on the same level hazards. In consultation with employees, analyze the tasks to be done by employees and the circumstances in which they will be done. Movement paths of people and materials should be planned and discussed with architects and employees. Providing suitable storage space will help avoid material being placed in work and traffic areas.

Design should consider:

- cords, leads, cables, and power boards
- lighting
- floor surfaces
- work functions.



Some design controls to reduce hazards include:

- providing power, telephone, computer and other equipment services from ducts in the floor or from the ceiling
- fitting out workplaces to provide flexibility without requiring cords on the floor
- ensuring adequate lighting for work areas, floors, stairs and passageways
- installing floor surfaces suitable for the work area, such as high friction tiles with deep profiles for draining wet areas.
- ensuring there is adequate storage space to keep materials out of work and traffic areas.

## **Flooring**

Consider the slip resistance of the floor surface. See Appendix 4 for information about floor surfaces and coverings.

When the flooring itself is identified as a hazard, and installing new flooring is not reasonably practicable, there are a number of floor treatments that are designed to be used on existing flooring.

This is a less expensive option than installation of completely new flooring. However, this would be a false economy if the treated floor lacks sufficient improvement.

Treatments most likely to be successful are those that substantially increase the surface roughness of the flooring. Be sure a floor treatment doesn't introduce a new hazard.

Minimize changes in the floor level. If levels must change, pedestrian connections are preferably by ramp rather than steps.

Avoid sudden changes in floor surface texture where possible. Where such changes do occur ensure good lighting and visual cues to the change are in place.

When footwear in the workplace cannot be controlled (for example, where the public have access) an effective strategy must be put in place, for example installing softer flooring such as thicker vinyl or cork or even carpet.

Increasing the roughness of surfaces can also increase the slip resistance of floors. For example, concrete finished with a steel trowel is much smoother and, therefore, more slippery than concrete finished with a wooden float or with a broom. Products that increase the surface friction will need to be maintained in accordance with the manufacturer's specifications.

## **Stair design**

Key points to consider are:

Ensuring the proportions of the stair treads are uniform throughout a flight of stairs.

- Applying non-slip edges (nosings) to improve safety on stairs and help give visual definition to the edge of the stairs. Metal nosings applied to carpeted stairs should have ample taper to blend smoothly with the carpet. Otherwise, heels can catch in the back edge of the nosing, causing trips.
- Providing clear visual cues for the start and finish of the stairs, ample lighting above the stairs, and a tread pattern that does not distract from perceiving the edge of each individual step.
- Providing handrails.

### **Ramp Design**

- Install ramps in preference to stairs if there is space to make the change in level without too great a slope.
- Ensure the slope of a ramp conforms to the appropriate Australian Standard and Building Code of Australia specifications. The maximum ramp slope should be 1 in 8 or if people with disabilities have to use the ramp 1 in 12.
- Apply flooring of greater slip resistance on ramps than that used on level flooring.

Provide clear visual cues for the start and finish of the ramps, ample lighting above the ramp as well as a suitable tread pattern in the flooring. Provide handrails on ramps as for stairs and provide kerbs of at least 100 mm high on both sides to prevent trolleys running off the edge.

### **Lighting**

Ensure both internal and external stairways and walkways are well lit. Lighting levels should accommodate changes in conditions such as transitions from closed to open areas.

### **Drainage**

Provide a means of containing and draining water or other fluids at machines or processes as required. If there is a substantial amount of fluid, provide channels in the floor covered by gratings. Use gratings as flooring if the work task is very wet and/or greasy. The surfaces should be slip resistant and not introduce a trip hazard with uneven surfaces. Duckboards, for example, may not be suitable because of uneven surfaces.

Flooring that needs to be washed or that will be wet at times, should be graded to drainage points to minimize pooling of water. The location of drains should be as close as possible to any source of liquid and there should be adequate drainage points provided to avoid excessive changes in floor level due to grading. Use molded floor tiles with deep profiles for draining fluids. These profiles are most effective if the edges of the patterns are sharp. Special equipment, such as high-pressure water sprays, may be needed for cleaning such tiles. Build-up of hardened grease or dirt can make high profile tiles ineffective.

## **Machinery and equipment**

Consider the following:

- Carry out regular maintenance and inspection of production machinery for signs of leaks. Prevent machines spraying out liquids by adjusting or enclosing the machine.
- Contain liquids on the floor that may come from production machinery. These can be contained to a small area surrounding the machine by using a metal tray or a low concrete wall. Ensure the containment area is effective, well drained and does not introduce further hazards.
- Use absorbent material rolls or flat sheets around the machine.
- Replace them when they become soaked with fluid.
- Install exhaust systems to remove dusts or vapors that could settle onto floors.
- Support electric cords and pneumatic hoses for air tools overhead to keep them off the floor.
- Ensure work and traffic areas are clearly defined and marked.
- Avoid the use of extension cords where possible by using battery-powered tools.
- Carry out regular site clean ups to remove rubbish.
- Implement measures to deal with water from leaking pipes or condensation from air conditioning / refrigeration units in cold rooms. This could be a serious problem because pools of water could freeze on the floor and cause a slip hazard.
- When moving materials by hand or by trolleys that are pushed, make sure materials are not stacked so high that the view of the floor ahead is obscured.

## **Weather**

- Stop rainwater, snow and mud being walked indoors on wet days.
- Have absorbent flooring materials set into the floor at entrances.
- Provide leak proof receptacles at entrances to buildings for leaving wet umbrellas or provide leak proof plastic bags at entrances for wet umbrellas that are being carried.

## **Spills**

Consider the following:

- Ensure your workplace policy and procedures for cleaning up spills clearly identifies who is responsible for isolating and cleaning it up without delay.
- Ensure that all staff are appropriately trained and instructed in the spills cleanup procedures.
- Making sure there is easy access to equipment and materials for cleaning up spills. Use absorbent materials for cleaning up spills. The material used should not leave a residue.
- Substances should be transported and carried in appropriate containers to avoid spills. Use lids or covers where necessary.
- If poor packaging causes spills, use alternative containers

#### External environments:

- A common hazard on external paths is uneven path sections where the edge of one section is above or below the surface of an adjacent section. Uneven pathways provide a typical low trip hazard, which can be difficult to see.
- Laying path sections on a stable base material will prevent them from tilting over time.
- Uneven or sloping ground surfaces can be avoided or leveled to eliminate or reduce risks.
- Good housekeeping is needed where there are constant changes to workplace conditions such as building sites.

#### Vegetation:

- Vegetation such as moss on external paths can be slippery, particularly in wet and shaded areas. Use commercial products to effectively remove these contaminants. Tree roots, leaf litter and wet grass can present slip, trip and fall on the same level hazards. Good maintenance can reduce these risks.

#### Housekeeping and cleaning:

- Grease build-up, spills and low objects.
- Newly cleaned wet areas where people may walk.
- Untidy and cluttered work areas.

#### To ensure that housekeeping and cleaning are performed to an appropriate standard:

- Allow sufficient time for staff to carry out these tasks and routines.
- Implement policies and safe work procedures in consultation with employees.
- Ensure all relevant employees are trained in the appropriate policy and procedures.
- Clearly define the cleaning tasks, including an appropriate sequencing of the work, so that the cleaners themselves are not put at risk by walking unnecessarily over wet surfaces.
- Ensure cleaning tasks are undertaken at an appropriate time and not during high traffic and busy periods.
- Use cleaning agents and detergents only according to the manufacturer's directions. Manufacturers of cleaning products should be consulted about suitable materials, equipment and procedures for minimizing slipperiness while still doing an effective job of cleaning. For the safe use of cleaning products, refer to the manufacturer's information on the product label, the workplace register of hazardous substances, and the Material Safety Data Sheet for the product. Cleaning materials must be compatible with the floor surfaces and provide appropriate slip resistance.
- Ensure all staff is trained in the safe use of chemicals and substances.
- Avoid build up of polish and other materials on floors (excess polish may be transferred to footwear and become a hazard elsewhere). It is important to maintain dry conditions where polished floors are used.

- Perform wet cleaning outside normal working hours wherever possible – otherwise barriers and warning signs should be set up to keep people off the affected areas. Consider providing alternative pedestrian routes if the usual route is being cleaned.
- Finish wet cleaning processes by vacuuming up solutions or mopping dry, to minimize the time the floor is wet.
- Remove hardened grease from tiled kitchen floors in order to benefit from any slip resistant texture of the tiles. This may require strong cleaning chemicals that should be thoroughly rinsed off with clean water. High-pressure water sprays may be necessary for cleaning profiled tiles.

### **Train staff**

All workers should have a good understanding of slip, trip and fall on the same level hazards in their workplace. This understanding should be developed through induction and ongoing training sessions. Training should also be discussed as a part of the consultation arrangements in the workplace. Training employees and other workers is essential to ensure control measures are maintained and used. All employees play a part in maintaining good housekeeping and cleanliness. Employees must be trained to report any hazards to their supervisor and/or the person responsible for occupational health and safety in the workplace.

Consider the following topics for training:

- How to recognize slip, trip and fall on the same level hazards and the part employees can play in minimizing them.
- Action to be taken in cases of spills. This training would cover procedures to begin cleaning up the spill and immediate action to warn others.
- The importance of regular floor surface cleaning and maintaining housekeeping procedures for preventing slip, trip or fall on the same level hazards. Cleaning staff should be trained on the methods required and control procedures such as restricting access and using appropriate signage during cleaning to warn of slippery floors.
- Information on the correct use of cleaning products, which can be found on the product label or from manufacturers recommendations.
- Regular cleaning of footwear soles to remove material trapped between the treads.

### **Signage**

- Use warning signs to alert people to surfaces that are wet following recent cleaning or spills.
- Signage should indicate procedures, such as specific footwear required for certain locations. This is important especially for visitors to the workplace.

## **Footwear**

Wear the most appropriate footwear for the job and work environment. Refer to the workplace policy on appropriate footwear. Risk assessments should include the use of footwear as a control measure, where this is appropriate.

General purpose work footwear should have the following characteristics:

- a slip resistant sole material
- a good tread pattern
- a rounded heel edge with good area of contact (avoid raised heels with small contact area)
- a cushioned sole
- a close but comfortable fit.

### **CHECKING THAT CONTROL MEASURES ARE ADEQUATE**

Risk assessments and controls must be reviewed regularly or whenever there is evidence that the existing risk assessment is no longer valid.

Review workplace control measures in consultation with employees when:

- An incident involving a slip, trip or fall occurs (even if it is a 'near miss').
- Changes to the premises or nature of the work are proposed.
- New equipment or work practices are introduced.

Make any necessary changes to prevent a recurrence. Consider the following points when reviewing controls:

- Are the cleaning methods for all of the floors and paths fully specified and recorded?
- Are all cleaning staff aware of the required methods and quality standards?
- Are all staff trained in the procedures for dealing with spills?
- Are all employees wearing required personal protective equipment as necessary?
- Have any changes been made to floors, requiring new risks to be assessed?

All managers and supervisors should be aware of their accountability for hazards relating to slips, trips and falls, including floor quality, cleaning, housekeeping, machinery and equipment, lighting, ramps, stairs, and drainage.

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## **APPENDIX 1 OCCUPATIONAL HEALTH AND SAFETY LEGISLATION**

The OHS Act and the OHS Regulation aim to ensure the health and safety and welfare of workers, self employed people and visitors to workplaces in NSW. Employers, self employed persons, employees and controllers of premises have obligations in the legislation. The following is a brief summary of those obligations.

To meet their obligations employers and self employed persons must:

- systematically manage identifiable risks in the workplace
- consult with workers on health and safety matters
- provide and maintain equipment and systems of work that are safe
- ensure that equipment and substances are used, stored and transported safely
- provide adequate information, instruction, training and supervision
- maintain the workplace in a safe condition, including entrances and exits
- provide for emergencies, including evacuation, communication and first aid/medical treatment.

To meet their obligations workers must:

- cooperate with their employer's efforts to meet obligations under the legislation
- take reasonable care for the health and safety of others in the workplace.

Controllers of premises must ensure that the workplace is safe, including entrances and exits. "Controller of premises" means a person who has control of premises used by people as a place of work, including:

- A person who has only limited control of the premises; and
- A person who has, under any contract or lease, an obligation to maintain or repair the premises.

Section 13 of the OHS Act requires employers to consult with their workers on matters relating to health and safety in the workplace. There are a number of ways this can be done: through an OHS committee, OHS representatives or by other arrangements agreed to at the workplace.

## **APPENDIX 2 SAMPLE HAZARD CHECKLIST**

### **CHECKLIST FOR THE PREVENTION OF SLIPS, TRIPS AND FALLS ON THE SAME LEVEL**

If any of these hazards are ticked, action needs to be taken.

Floors:

- Can water be walked onto smooth floors (eg foyers) on rainy days?  
 Are there any hard, smooth floors in wet or oily areas?

- \_\_\_\_\_ Are there any leaks of fluids onto the floor from processes or machines?
- \_\_\_\_\_ Are there any floor surface transitions not easily noticed (any ridge that is as high as a footwear sole or higher)?
- \_\_\_\_\_ Is there any ice or water on cold room floors?
- \_\_\_\_\_ Is the floor slippery when wet?
- \_\_\_\_\_ Is there poor drainage causing pooling of fluids?
- \_\_\_\_\_ Are any anti-slip paint, coating profiles or tapes worn smooth or damaged?
- \_\_\_\_\_ Are there any isolated low steps (commonly at doorways)?
- \_\_\_\_\_ Are there any trip hazards due to equipment and other objects left on the floor?
- \_\_\_\_\_ Are there any raised carpet edges or holes worn in carpets?
- \_\_\_\_\_ Are there any tiles becoming unstuck or curling at the edges?
- \_\_\_\_\_ Are there any holes or unevenness in the floor surface?
- \_\_\_\_\_ Stairs and ramps
- \_\_\_\_\_ Is the lighting insufficient for ramps or steps to be seen clearly and without glare?
- \_\_\_\_\_ Do any steps have too small a rise or tread or an excessive nosing?
- \_\_\_\_\_ Are any step edges (nosings) slippery or hard to see?
- \_\_\_\_\_ Are the steps uneven or are there excessive variations in step dimensions?
- \_\_\_\_\_ Are handrails inadequate on stairs?
- \_\_\_\_\_ Are ramps too steep, or too slippery?

### **Lighting**

Is there insufficient lighting in passageways and at flooring transitions, ramps or stairs?  
Does the lighting throw distracting shadows or produce excessive glare?

### **Outdoor areas**

- \_\_\_\_\_ Is there a buildup of moss or other vegetation on pathways?
- \_\_\_\_\_ Are there any surface transitions not easily noticed (any ridge that is as high as a footwear sole or higher)?
- \_\_\_\_\_ Are there potholes in footpaths or walkways?

### **Housekeeping**

- \_\_\_\_\_ Is there a build-up of polish on floors?
- \_\_\_\_\_ Is there an excessive residue of detergent?
- \_\_\_\_\_ Do employees have to walk on floors wet from washing?
- \_\_\_\_\_ Are wet floor signs not available or not used correctly?
- \_\_\_\_\_ Do you need to provide information / training / advice to contractors regarding cleaning procedures?
- \_\_\_\_\_ Are paper, rubbish, dirt, spills etc. left on the floor?
- \_\_\_\_\_ Are aisles poorly marked and cluttered?
- \_\_\_\_\_ Are there any trip hazards due to equipment and other movable objects left lying on the ground?
- \_\_\_\_\_ Do spills (wet or dry) occur regularly during work processes?



## Tasks

- \_\_\_\_\_ Do employees have to walk or work on greasy, oily or wet floors that are not adequately slip resistant?
- \_\_\_\_\_ Do loads that are carried or pushed interfere with forward vision?
- \_\_\_\_\_ Are the loads to be carried excessive or likely to upset a person's balance?
- \_\_\_\_\_ Do heavy trolleys have to be pushed up ramps?
- \_\_\_\_\_ Are employees hurried due to time constraints?

## Footwear

- \_\_\_\_\_ Do the employees' safety shoes lack grip?
- \_\_\_\_\_ Are the tread patterns on safety footwear too worn?
- \_\_\_\_\_ Are the tread patterns clogged with dirt?

**APPENDIX 3  
EXAMPLE OF RISK ASSESSMENT AND CONTROL PLAN**

**Example of Risk Assessment & Control Plan**

<u>Hazard Location</u>	<u>Hazard</u>	<u>Risk Assessment</u>	<u>Control</u>
Dining Area	Slips due to worn floor tiles. Tiles worn badly near door. Slight wear on tiles elsewhere	High risk from badly worn tiles	Steam clean tiles to improve friction (short term measure) immediately. Replace tiles around door area (high traffic) with new slip-resistant tiles tomorrow.
Kitchen and food preparation.	Slippery floor due to grease deposits. Oil splashing onto floor near stoves.	High risk	Splash guards to be installed immediately. Steam cleaning of floor to improve friction immediately.
Cool room	Smooth concrete floor slippery when wet. Water condensing on floor.	High risk when wet	Treat with slip-resistant coating (epoxy coating or paint containing grit) and supply staff with slip-resistant footwear immediately.
Passage ways and service areas	Wet vinyl following cleaning has caused slips. Application of wax increased slipperiness especially when wet. Very slippery surfaces awkward to walk on.	High risk	Replace vinyl with non-slip flooring immediately. Do not apply wax.

## APPENDIX 4 FLOOR CHARACTERISTICS

<u>Floor Type</u>	<u>Characteristics</u>
Concrete	Rounded aggregate can be slippery when concrete wears. Interior surface is often sealed to prevent dusting and absorption of liquids - this can increase slipperiness.
Terrazzo	Gives good appearance and wears well but can be slippery when wet, when excess polish is used or when dusty.
Quarry tiles, ceramic tiles	Low water absorption and good resistance to chemicals. Slippery in wet conditions if smooth, but can be molded with aggregate or profiles to improve slip resistance - special cleaning equipment may then be required.
Glazed ceramic tiles	Slippery when wet, particularly with soapy water. Some slip resistance treatments available, but preferable not to install these tiles on floors.
Vinyl tiles & sheet	Easy to clean. Use sheet form where frequent washing is required to avoid water getting under tiles. Slippery when wet, particularly if polished, however slip resistant vinyl is available. These have aggregates molded in. Thicker and softer vinyl is more slip resistant than hard ones.
Cork	Must be sealed to prevent absorption of oil and water, but may then be slippery when wet.
Steel plate	Tends to be slippery when wet or oily, particularly when worn.
Rubber	Less effective in wet conditions. Must be fixed down well at the edges and joints or will cause a trip hazard.
Plastic matting	Interlocking PVC extrusions give good drainage and slip resistance. Hose down or steam clean.
Carpet	Carpet has a shorter life than hard floor surfaces, but it can be a cost-effective solution. Installations should be wall to wall, to avoid the hazard of a trip on edges. When used in small local areas, such as at entrances, it should be installed in a recess in the floor. Alternatively, it should be rubber-backed and with hardwearing tapered edges. Trolleys can be harder to push on carpet, but if larger wheels are fitted and the carpet does not have a deep pile, this is not a serious problem.
Fiberglass gratings	This product can have grit particles molded into upper surface to provide very good slip resistance. Fluids are quickly drained away.