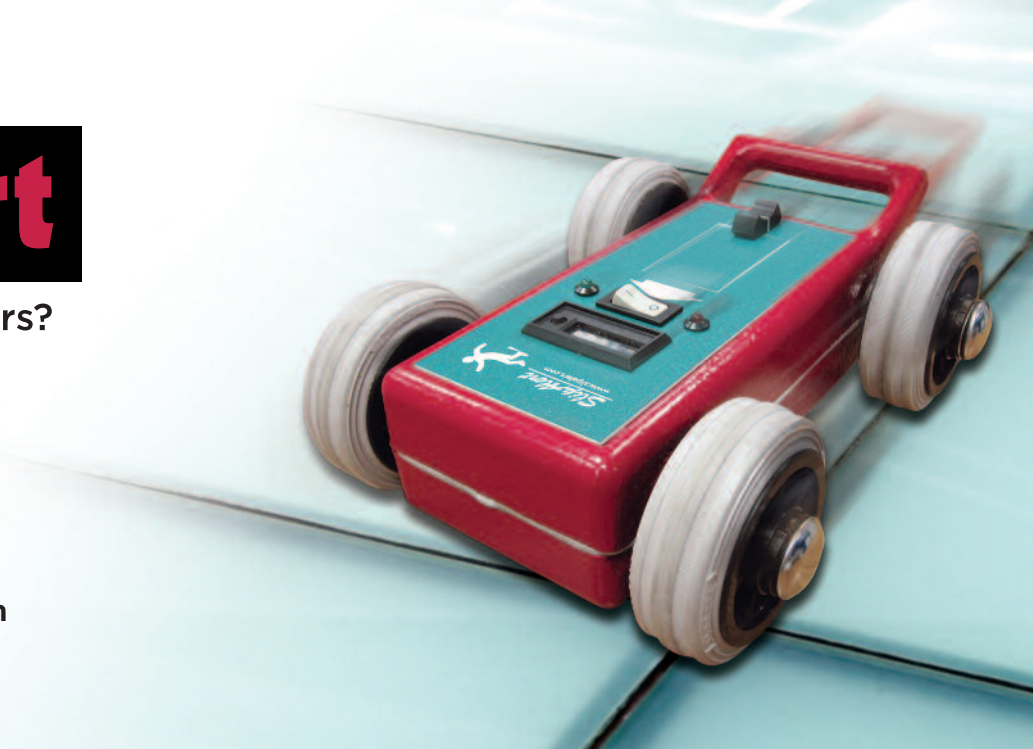




how safe are your floors?

The **FAST, EASY,**  
**ACCURATE** floor slip  
tester

Pocket guide to slip prevention



# Slips cost more than you might think

## Capital Costs

- The cost of unsuitable flooring that results in slip injuries
- The cost of ineffective anti-slip treatments, coatings, or paints

## Operational Costs

- Ineffective, inappropriate or wasteful cleaning
- Insurance, legal and admin costs of claims for slip injuries

## Hidden Costs

- Slip injuries cause 100,000's of hospital bed days per year
- Insurance covers only a small part of the overall cost of slipping issues
- Slip injuries can damage your business reputation

**Save time and money:** learn how to keep your floors free from slipping accidents.





## Has someone slipped up?....

Small mistakes or changes can lead to serious costs and *slip headaches*.

### **An inappropriate floor can be expensive**

Legal disputes after laying an inappropriate floor can be expensive. Specify the required slip resistance or pay for the consequences.

### **Don't slip up when changing your cleaning**

A small change to the cleaning at a shopping mall resulted in several broken bones. Test for slip risk before and after cleaning regime changes.

### **Change of use... who slipped up**

New owners installed a kitchen and canteen near the top of stairs. The floor was unsuitable and dangerous. *Change of use: test the floor.*

### **FM and contract cleaning in "no blame" partnership**

Quick and easy slip testing helps you share data and work in partnership with in-house or contract cleaners to keep floors safe. Safer, greener and lower cost.

*How safe are your floors?*

avoid costly slip headaches



# Slip Risk Matters

## Pedestrian slipping accidents are common...

- Slips often ignored (*by the public and by professionals*)
- Slip risks not always well understood
- The slip risk of a floor can change *significantly*

## Slips are the biggest cause of serious injury

- For every serious slip injury there are estimated to be 40 minor slips
- Each slip can cost your business time/money and reputation
- Wet or contaminated floors cause thousands of serious injuries every year

***Did you know?...** wet slip risk is **not** related to dry slip risk. Over-specifying dry slip risk is unhelpful. You should measure the **wet slip risk** of every floor (if there is any chance of water or contamination).*

*Treat slip risk like  
every other serious  
health & safety issue*

***Don't wait till  
someone slips up***

## Slipping accidents on the flat rarely kill but..

- Slipping accidents cause thousands of broken bones
- For the elderly an injury can later result in complications or death

## Slips often lead to more serious injuries...

- Falling from heights or near the top of stairs
- Falling in kitchens near boiling water or hot fat
- Falls in factories or near dangerous equipment

## Every floor should have a **certificate of slip risk** specifying:

- the normal use of the floor, expected footfall per day, and any special circumstances i.e. vehicles
- the slip risk: clean dry, clean wet, before + after cleaning, during normal use, and worst case
- likely contamination (types and causes), the cleaning regime, and required slip testing frequency

***Save time and money:*** most slip accidents and slip injuries can be prevented.

avoid costly slip headaches



# Slip Risk Changes

## Variations on a Floor

- The floor surface (*and slip risk*) may be changed by coatings, polishes, treatments or wear
- Contaminants may bond to the floor surface (*e.g. Algae on an outdoor floor*)

## Variation Over Time

- On some floors the slip risk can change significantly in the course of each day (*e.g. a kitchen*)
- Wear, coatings, polishing or contamination may change the slip risk progressively

## The Effects of Wear on Slip Risk

- Wear caused by pedestrians or vehicles can change the floor surface
- Regular buffing may polish up the surface and change the slip resistance

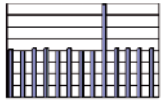
**Did you know?...** A **safe floor** has less than a 1 in 1 million risk, while a **high risk** floor has 1 in 2 risk, i.e. on a high risk floor most people in normal shoes will need to modify their gait to avoid slipping.

## Case Study: A Shopping Mall

After 10 years with no serious slip injuries, a shopping mall reported several serious slip injuries and 6 broken limbs in one day.

***Something had changed.***

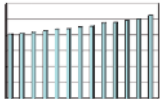
*Monitoring the slip risk over time will prevent many slip accidents.*



### Monitoring slip risk takes seconds and will prevent injuries

#### Abnormally high risk on one area of floor

Some shopping malls monitor random areas of floor every day. If one area of floor measures a higher risk than the others it results in re-cleaning that area and greater care of future cleaning.



#### Slowly Rising Risk

Some swimming pools notice rising levels of risk over time. This can be caused by a build up of body fats that normal cleaning does not remove. Without slip test data the floor would be an accident waiting to happen.

***Most slip accidents can be anticipated and therefore prevented.***

avoid costly slip headaches



# Different Floors, Different Risks

## Different Flooring Materials

- Wood, vinyl, ceramic tiles, resin flooring, concrete, marble...
- The slip resistance will vary depending on how the floor surface is finished

## Different Function

- Swimming pool, kitchen, warehouse, entrance lobby...
- The use of the floor defines the required level of slip resistance

## Other Crucial Differences

- Indoors/outdoors, level of traffic
- The level and type of contamination on the floor will influence testing frequency



***Appropriate floor surfaces are easy to clean and have a low slip risk during normal use.***

## Poolside Floor or Shower Room

- Floor is constantly wet, bare foot slip risk
- Regular cleaning may not prevent a build up of body fat

## Kitchens and Food Preparation Areas

- Contamination from cooking, fat, oil, debris
- Water on top of grease will increase the slip risk considerably

## Outdoor Surfaces and Slip Risk

- Paving, car parks or decking
- Slip risk may change with seasons, wet weather or a build up of algae on the surface

## Each floor is different: certificate of slip risk should be specific to each floor

- Use of the floor variables: footfall, type of footwear, speed of walking, vehicles or machinery
- The required level of slip resistance will be set based upon the flooring material and its use
- The likelihood of contamination or change to slip risk will determine the frequency of monitoring

***Managing the specific risks on each floor requires reliable and detailed slip test data.***



# Staff Involvement & Training

## Procurement and all responsible for new flooring

The principles of sustainability and safety demand that floors will provide adequate slip resistance at the end of an economically reasonable working life.

## Health and Safety Manager

Slip prevention has been the “Cinderella” of health and safety. H&S manager in every business need a slip prevention policy and management systems that align with procurement, cleaning and flooring maintenance. Each floor area should merit its own slip prevention compliance plan.

## Cleaners, Operational Staff, Floor Maintenance

Small changes to the cleaning schedule, cleaning methods or cleaning materials can make a big difference to overall slip risk. Green cleaning can be safe. Property owners and Facility Managers must educate staff to fully understand and manage slip risks.

***Did you know?:*** When you slip, your foot accelerates away from you faster than Usain Bolt for up to 500mm before you land on your bottom where the slip started.

## Benefits of Staff Understanding Slip Risk

- Staff involvement reduces claims
- It encourages reporting of near misses
- It encourages proactive monitoring of slip risks

***Who is responsible for slip prevention in your business?***

## Training on Slip Prevention

- Avoids potentially costly mistakes like over-specifying dry slip risk
- Helps to avoid issues with floor purchasing and floor maintenance
- Helps plan and manage an effective and safe cleaning regime

*Flexible courses in slip testing and slip prevention focus on your business.*

***Informed decision-making can prevent many needless slip injuries.***



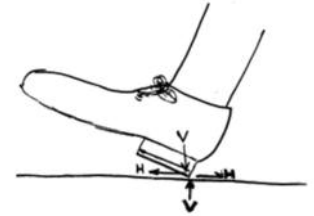
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# Floor Slip Testing

## Coefficient of Friction... $\mu$

The physics of slip resistance is simple in theory...  $\mu = H/V$  i.e. coefficient of friction is the Horizontal Force divided by the Vertical Force.



## Hydrodynamic Squeeze Film

Rubber or plastic heels defy the simple physics. The addition of water or other contamination make it more complicated. Water can form a “squeeze film” that creates a lift effect like aqua-planing.

## Pendulum Test Values (PTV)

The Pendulum was invented in 1930 in America. Also known as the British Pendulum or TRL Pendulum because it was adopted by the Transport Research Laboratory as a skid tester. Until the invention of SlipAlert, the Pendulum was the only device to re-create the squeeze film effect required to measure wet slip risk.

***Be wary of slip risk measures that you cannot easily verify, and inaccurate “trundle test” measures.***

## Different Shoe Heels and Bare Feet

- Slips usually occur at heel strike
- Test using hard or soft rubber as appropriate
- TRL (soft) rubber simulates bare foot slipping

## SlipAlert accurately simulates a pedestrian slip

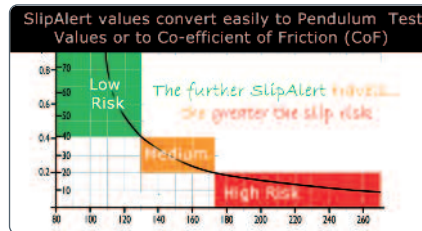
- SlipAlert travels at least the length of slip, and simulates the range of speed during a pedestrian slip
- As in a pedestrian slip, SlipAlert exerts a consistent down force
- SlipAlert correlates with the Pendulum and mirrors real slip experience on all floor surfaces

## SlipAlert floor testing is fast and flexible

- Test many locations, different directions, test wet, dry, dusty, and “as found” conditions
- Look for variation caused by areas of wear/contamination
- Test the floor with both soft and hard rubber sliders especially for floors with barefoot users

*Re-test floors periodically to see if there is any change, and re-test if there is a reported slip accident.*

***Re-test whenever there is a change made to the floor, it's use, or the cleaning regime.***



# Three Layer Model and Floor Safety

## Human Layer Controls

Can you control what shoes people wear, how fast they walk, bare foot access, wheelchair access etc?... e.g. kitchen staff may benefit from good slip resistant footwear.

## Contamination Layer Controls

Can you control ingress of water or contamination, frequency of cleaning, method of cleaning, access to floor when wet? e.g. after cleaning, if the floor is high risk when wet, always ensure floor is fully dry before staff walk on it.

## Floor Layer Controls

Is the floor suitable for the required use? Is the slip resistance of the floor durable, can the floor be kept clean? Will the surface finish (including coatings, paints etc) change?

**Top Tip:** *consider the factors you can control to reduce the overall slip risk.*



measure the slip risk  
with *and without*  
contamination

Human Layer: shoe heel, walking speed, gait, weight...

Contamination Layer: dirt, water etc. between shoe and floor

Floor Layer: material, hardness, porosity, surface finish...

- The human layer determines the level of grip that is required.
- The level of contamination will limit the available grip.
- The clean dry floor will indicate the maximum grip available from the floor.

SlipAlert makes it quick and easy to measure and monitor the floor slip risk. You can measure available slip resistance of the floor in normal use, when clean and dry, and when wet or otherwise contaminated. **This enables you to make informed decisions and manage the overall slip risk.**



## New Floor or Replacement Floor

### Laying a new or replacement floor?

It is important to make sure you get a floor that will stay safe throughout its life (maybe 25+ years).

Every flooring situation is different. Make sure you understand the wet/dry slip resistance you need for the life of your new floor.

Your new floor should have low slip risk in its normal conditions and even when wet/contaminated it should not measure high slip risk.

***Did you know?:*** Some new floors lose 20% of their grip within weeks.

***Top Tip:*** Test the old floor before replacing it. Your new floor should be at least as safe as the old one, specially in measures of wet slip risk.

## Get the right flooring...

Staff and customers will expect floors to be safe and fit for purpose.

**Specify** the minimum level of slip resistance required for the safe use of the floor. Make sure operational staff are aware how to maintain the required level of slip resistance.

**Before purchasing.** Test potential new floors with the type of contamination that will be present.

**Test** a small area of laid floor before wide-spread roll out to ensure that the new floor matches your specification and performs as expected.

**Test** both the wet and dry slip risk. Test slip risk of normal shoes, trainers or bare feet as appropriate for the use of the floor.

**Test again** after a period of normal use and cleaning.

***Save time and money:*** Work with flooring suppliers who will guarantee lasting slip resistance. A few minutes testing could save you years of slip headaches.



# Flooring Maintenance

## Coatings / Paints / Varnish

Different coatings have different slip resistant properties. Test coatings when applied and re-test periodically to determine how wear may be affecting the slip resistance over time.

## Anti-slip treatments

Anti-slip treatments may be effective on one floor surface but not on another. Work with your supplier to get the required level of grip without damaging the surface or its ability to be cleaned.

## Replacement tiles and repairs to floor surfaces

Replacement tiles may look like the original tiles, but could still have very different slip resistance properties. Test each batch of tiles and re-test the floor slip risk after any surface repair.

***Unexpected change in slip resistance is a major cause of slip injuries.***



## Varnish, coatings and paints

- Select the best anti-slip finish by testing each on a small area of floor before applying
- Test again periodically after to check the effects of wear

## Anti-slip treatments

- Anti-slip treatments should be tested when applied
- Re-test regularly to establish the effectiveness of slip resistance over time
- Avoid anti-slip treatments that damage the floor surface making it difficult to clean

## Changes to floors or Replacement Tiles

- All changes to flooring should be tested for slip risk
- Monitor changes to slip risk caused by diamond polishing or buffing of the floor surface
- Measure the slip resistance before and after every change to the floor

**Top Tip:** Challenge your suppliers for guarantees on the durability of the anti-slip finish.

avoid costly slip headaches



# Floor Cleaning and Slip Risk

## Plan, Manage and Control an Effective Cleaning Regime

- Cleaning fluids are not always left on the floor long enough to remove grease or clean properly
- Measuring the slip risks before and after cleaning helps plan the most effective frequency and method for cleaning

## Avoid Risks During/After Cleaning

- Depending on the wet slip risk, you may need to keep people off the floor until it is fully dry
- Slip testing can tell you if a tiny residue of water will leave the floor dangerous
- Your cleaning staff may be safer wearing effective (properly tested) slip resistant footwear

## Changes to the Cleaning Regime

- Slip testing can help you to plan the timing, the frequency and the method of cleaning
- Slip testing can help you to adopt “green” cleaning methods that are effective
- If cleaning materials /methods are changed, monitor the effect on the slip risk of your floors

***Did you know?:*** *On some floors, one tiny drop of water can be enough to cause a slip accident.*

## Avoid risks... test floors after cleaning

- Carelessly mopping may spread oil or grease to create a higher risk of slipping
- Cleaning machines used with the inappropriate pads may have a polishing effect that increases slip risk over time
- Mopping a floor while people are still in the area can cause unnecessary slipping risk
- Cleaning fluids can deposit a residue that may increase slip risk (if not rinsed away)
- De-greasing floor cleaning products needs time to work. Slip testing will help you to determine the optimal method of use
- Silicone polish applied to furniture or glass may fall onto the floor surface and lie un-noticed till someone slips



*Floor cleaning can **cause** OR **prevent** slip accidents. **Don't let your cleaners slip up.***

avoid costly slip headaches



# Floor Safety in a Box

## **SlipAlert: the new easy way to manage floor safety**

- UK HSE tested and in British Standard BS8204
- Correlates with the Pendulum and with real slips
- Accurate, repeatable measures taken in seconds

## **Proactive Risk Management**

- Benchmark all floors and periodically re-test to look for changes
- Monitor the effectiveness of cleaning and the effectiveness of anti-slip coatings
- Re-test whenever there is a change: to the floor, to its use, or to the cleaning regime

## **Manage Out Slip Risk with Intuitive and Easy Proactive Testing**

- The further SlipAlert travels, the higher the SlipAlert Test Value (STV), and the greater the slip risk

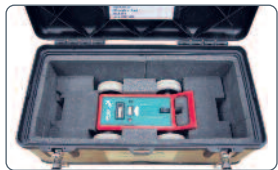


## Risk Assessment Made Easy

For many floors, testing as part of your annual risk assessment will reassure you the slip risk is within manageable parameters. If the floor, its use, or the cleaning changes, then a quick re-test will provide advance warning and will help you to eliminate most slip injuries.

### SlipAlert: you get much more than a test machine

- Training on floor safety and slip prevention
- Best practice advice for slip testing and slip prevention
- Floor safety helpline to answer any questions about slipping issues



**SlipAlert:** *The new British Standard slip test. Faster. Easier. Better.*

avoid costly slip headaches



# SlipAlert: Floor Safety in a Box...

Tested by the UK Health & Safety Executive and Independent Test Houses  
Correlates with British Pendulum, but easier and faster to use  
A breakthrough in slip testing and now in British Standard BS8204

- Test new floors and changes to floors
- Monitor floor safety and cleaning effectiveness
- Identify and manage out slip risks

[www.slipalert.com](http://www.slipalert.com) the easy measure of floor safety

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Try SlipAlert today