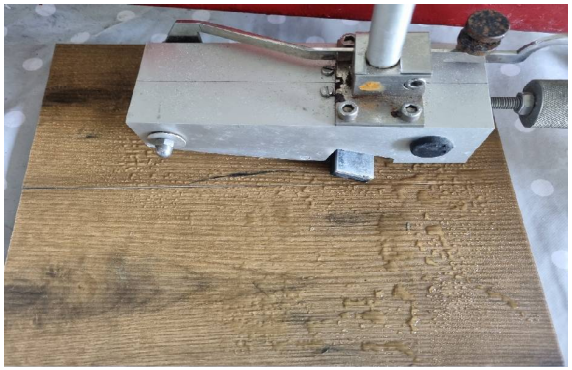
Increasing Safety by Reducing Risk

BS7976 -2 Pendulum Slip Test

UK SLIP RESISTANCE GROUP



Customer: Floors for Paws

Test Number: FS10174

Operator: Glenn MacLaughlan

Date of Test: October 2022

On Site: Sample Sent To Office

Pendulum Calibration Number: CN642

Pendulum serial number: SK1595

Slider Type :Slider 55

Contaminate Description: Water

Surface: Paw Safe

Principal Direction

Calibration Checks Done:

lapping accepted 65+/-3	64	63	63	63	**62**
Glass accepted:7+/-3	9	8	8	8	**8**
Pavegras Tile:	37	36	36	36	**36**

Theory

A site assessment is an important component in determining the slip risk of any given floor. The HSE's pedestrian slip potential model highlights important environmental factors in a slip. Contaminating substances, frequency and methods of cleaning, types of footwear and likely pedestrian behaviour all affect the potential for a slip incident and are given due consideration.

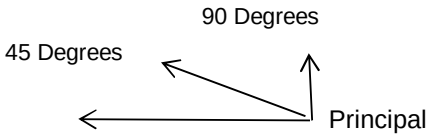
Research carried out by the Health and Safety Laboratory, in conjunction with the UK Slip Resistance Group (UKSRG), has shown that it is possible to assess the characteristics of floor surface materials needed for satisfactory slip resistance. The Health and Safety Laboratory has developed a "reliable and robust" test method that forms the basis of Floor Safes assessment procedure.

The pendulum skid test forms the basis of the coefficient of dynamic friction measurement of a floor. A calibrated 'foot' swings from a horizontal point of release, strikes the flooring surface for a known distance, then reads the "pendulum test value" on its over swing. The rubber slider that contacts the floor is constructed of '4S' rubber (Standard Simulated Shoe Sole) and is designed to replicate the most common slipping motion experienced by pedestrians wearing shoes. A softer, more malleable, rubber (TRL rubber) may be used to simulate a barefoot or casual shoe slip. Pendulum testing is one of the few methods that models the formation of a hydrodynamic squeeze film between the floor and shoe sole, a major factor in a wet slip.

Test surfaces are subject to eight measurements of the PTV with the first three being discounted from calculations of the mean.

A prepared standard rubber slider attached to a weighted 'shoe' is allowed to swing from a horizontal point of release. The slider is mounted on a spring loaded bracket and makes contact with the floor for a known distance. The height to which the shoe travels after contacting the floor gives a reading of the Pendulum Test Value (PTV, formally known as SRV Slip Resistance Value). The dynamic coefficient of friction of a test surface has a direct and measurable effect on the PTV reading obtained.

Tested Directions



HSE Guidelines for pedestrian slip

0 – 24 High Risk for Slip potential

25 – 35 Moderate Risk for Slip Potential

36+ Low Risk for slip potential.

	1	2	3	4	5	6	7	8	Result PTV	Risk level of slip potential
Dry										
Principal	101	100	99	99	99	99	99	99	**99**	**Low**
45 degree	102	101	100	100	100	100	100	100	**100**	**Low**
90 degree	104	103	102	102	102	102	102	102	**102**	**Low**
					Classification of 3 Directions				**100 PTV**	**Low Risk**
Wet										
Principal	52	50	51	49	48	48	48	48	**48**	**Low**
45 degree	53	52	51	50	50	50	50	50	**50**	**Low**
90 degree	54	53	52	51	51	51	51	51	**51**	**Low**
				Classification / Average of 3 Directions					**49 PTV**	**Low Risk**
				Classification / Lowest of 3 Directions					**48 PTV**	**Low Risk**

Glenn MacLaughlan is the Managing Director of Floor Safe Ltd. The company was started in 2007 and has provided pendulum slip testing for many major UK businesses. Glenn is also a member of the UK Slip Resistance Group. The UKSRG is the leading independent authority on slip resistance in the UK.

**It is a clear requirement of UK Law that floor surfaces must not present risks to health. Although there is no requirement to meet >35ptv . In every legal case we have known, a 'low risk' classification (36+PTV) has been a key point of interest in determining whether a surface is safe or slippery*.

Statistics taken from the HSE and UKSRG show how the risk of slip potential decreases once the PTV increases

PTV	Accident risk exposure
19	1 in 2
24	1 in 20
27	1 in 200
29	1 in 10,000
34	1 in 100,000
36	1 in 1,000,000

Values of Tangents and the Relationship to Pendulum Floor Testing Values				
Slope Angle	**Exact Calculations**	**Rounded Figures (for ease of remembering)**	**New Minimum PTV Value Required (To Nearest Whole Figure)**	**Exact**
1 degree	100 x Tangent of 1 degree (0.0174550) =	**1.75 PTV**	38	(37.75)
2 degrees	100 x Tangent of 2 degrees (0.034921) =	**3.50 PTV**	40	(39.50)
3 degrees	100 x Tangent of 3 degrees (0.052408) =	**5.25 PTV**	42	(41.25)
4 degrees	100 x Tangent of 4 degrees (0.069927) =	**7.00 PTV**	43	(43.00)
5 degrees	100 x Tangent of 5 degrees (0.087489) =	**8.75 PTV**	45	(44.75)

Clients include: .

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The Pendulum Slip Value Readings were correct at the time of test. However this does not indicate the readings will remain the same this can be due to the installation, daily maintenance and the volume of foot falls. **If a sample has been sent for lab testing we highly recommend a re-test in situ, due to environmental conditions and batch variations.** Reported results in no way imply that the flooring under test is approved or endorsed by Floor Safe Ltd Floor Safe Ltd do not give or assume warranty or condition, express or implied, statutory or otherwise, as to condition, quality, performance, merchantability or fitness for the purpose of the test subject and all such warranties and conditions are hereby excluded save to the extent that such exclusion is absolutely prohibited by law. Floor Safe Ltd shall not be liable for any subsequent loss or damage incurred by the client as a result of information contained within this report. **Results given herein refer only to areas or sample tested by Floor Safe Ltd** ***Please note: The uncertainty of measurement of the pendulum, can be around +- 2 or 3 ptv.** Samples are held at head office for reference for up to 1 month. Samples returned are void of all results above due great variations of environmental conditions.