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Floor Graphics - Slip Ratings

The below information provides a general summary of slip ratings for floor graphic products.

It is important to carefully consider all the conditions a floor graphic will be subjected to - and not just wet or dry situations. Contaminates like oil will affect floor friction more so than water, floors at a gradient are also different to level floors, and the amount or type of traffic endured by the graphic will impact the durability.

*Floor graphics must be safe in use. Our products are all rated according to the DIN 51130 standard for testing the slip resistance of floor coverings.

What are slip ratings and why are they important?

Slip ratings and certifications determine the suitability for a given product in a specific environment. They are important to keep consumers safe and avoid any potential hazards.

Why is it important to understand slip certifications?

It's important to fully understand slip certifications as this will have massive impact on the product you decide to use.

What different certifications are availble?

In the UK and Europe there are 2 certifications used to rate the product and advise its suitability for floor applications.

1.DIN 51130:2010 - R Rating 2.BS 7976-2/EN13036-4 - Pendulum Test (PTV)

What is an R Rating and what does it mean?

Many European flooring manufacturers and floor graphics material manufacturers use ramp-type tests to classify the slip resistance of their products before sale. Such tests are generally carried out using German National Standard test method (DIN 51130:2010).

The DIN 51130 ramp test is designed to simulate the conditions commonly encountered in typical workplace slip accidents. DIN 51130 uses heavily soled EN:ISO 20345 safety boots with motor oil contamination.

The test method involves an operator walking forwards and backwards over a contaminated flooring sample. The inclination of the sample is increased gradually until the operator slips. The average angle of inclination at which slip occurs is used to calculate the slip rating of the flooring.

The result is based on the R (Ramp) scale which runs from R9 to R13, where R9 is a high risk of slip and R13 is the lowest risk. Floor surfaces that are classified by the DIN 51130 standard as R9 (or in some instances R10) could be slippery when used in wet or greasy conditions.

The R scale starts at R9 which is the lowest rating and progresses through increasing values to R13. It is important to note that surfaces classified at R9 and R10 will still be slippery when used in wet or greasy conditions.

DIN 51130 R-Value Slip Resistance Classification

R RATING	R9	R10	R11	R12	R13
Slip Angle	6-10°	10-19°	19-27°	27-35°	35°+

What is a PVT Rating and what does it mean?

The pendulum test is a method that involves a swinging arm, with a rubber slider mounted on the end that sweeps over the test area.

There are two standard sliders, slider 96 (4S) represents average pedestrian footwear and slider 55 (TRL) represents barefoot floor conditions. The friction of the flooring has a direct and measurable effect on the Pendulum Test Value (PTV) given. The test is carried out first in dry conditions and then after contamination with water.

Research has confirmed that the Pendulum Test Value (PTV) is a more reliable and accurate method for evaluating slip resistance. As a result, the HSE (Health and Safety Executive) and many insurance companies have adopted this as a standard test method for assessing slip resistance.

The PTV (Pendulum Test Values) are listed in a scale from 0 to 100 with 100 being the most slip resistant. The minimum slip resistance value considered safe for walking on in wet conditions is 36 PTV.

BS 7976-2 / EN 13036-4 Slip Resistance Classification

PTV	0-24	25=35	36-74	75+
Classification	High Slip Potential	Moderate Slip Potential	Low Slip Potential	Extremelly Low Risk

Pendulum Test method versus Ramp Test method

The following able is intended as a guide only and does not represent a direct correlation of the rating from the German standard (DIN 51130) to the European standard (EN 13036-4).

DIN 51130 R9 - R13 RATINGS	EN 13064-4 PENDULUM TEST VALUE (PTV)	LIKELIHOOD OF SLIP INJUSRY
R9	11 to 18 PTV	Very Poor - Slip injusry almost certain to occur
R10	18 to 34 PTV	Poor - Slip injury likely to occur
R11	34 to 51 PTV	Moderate - Slip injusy may occur
R12	51 to 70 PTV	Low - Slip injury unlikely to occur
R13	70+ PTV	Extremelly Low - Slip injury rare to occur

The testing methods are different according to their specific norms and the values are not comparable.