

TECHNICAL

Understanding Slip Resistance – The Basics



In Australia slip resistance is measured according to two different (but similar) standards depending on whether the surface is new or existing. New pedestrian surfaces are tested in accordance with the current version of AS 4586 while existing pedestrian surface are tested in accordance with AS 4663.

The standard for new pedestrian surfaces (AS 4586) provides a method for determining dry slip resistance (using a Floor Friction Tester) and a range of different methods for evaluating slip resistance in a wet condition (i.e. Pendulum, Wet/barefoot Ramp and Oil-wet Ramp). Only one of these methods (Pendulum) can be used on a fixed (installed) surface and this method is documented within AS 4663 along with the method for the Floor Friction Tester which is also able to be used on site.

The various slip resistance test methods are described briefly below along with the pros and cons for each method.

Measurement of dry slip resistance.

Determination of dry slip resistance is of particular importance for smooth floors (e.g. polished granite or terrazzo) that are located in areas that would not normally become wet. Such areas may include internal foyers, upper lift lobbies or shops inside shopping centres.

The floor friction tester (known by acronym FFT or the popular marketing name of Tortus) is a portable self-powered mobile unit which measures the dynamic coefficient of friction between the surface and a standard rubber slider. The unit is about the size of an old fashioned VCR and basically includes a load cell, a friction foot fitted with a small rubber slider and a means of recording the coefficient of friction as the unit moves across the floor.

The rubber slider within the FFT is conditioned on Grade P400 wet & dry abrasive paper before being run across the surface to be tested. As the unit moves across the floor a print out is produced which plots the coefficient of friction on chart paper. On conclusion of the test run the unit calculates a mean reading for the test run.

As the FFT unit is electronic it is a very sensitive unit which can differentiate between small changes in surface finish. The compact nature of the unit makes the FFT unobtrusive and a versatile piece of equipment which can be used in small spaces. The slip resistance of sloping surfaces can be determined by running the FFT up and down the slope and averaging out the results.

The rubber slider used is a small disc only 9mm in diameter which means that the area of the surface tested is quite small and the results achieved may not be representative of the floor if testing locations and directions are not chosen carefully. The slider also has difficulty in dealing with changes in surface profile which means it can become caught up by lippage from uneven tiles.

There are only two classifications for dry slip resistance. The current standard for new pedestrian surfaces (AS 4586:2013) classifies a coefficient of friction of greater than or equal to 0.4 as class 'D1' which was previously classified as an 'F' in the earlier 2004 version of the standard. A coefficient of less than 0.4 is classified as class 'D0' (previously classified as a 'G'). Although the Standards Australia handbook HB198:2014 does not give a recommendation for 'dry floors' a D1 classification can be considered a suitable guideline.

Measurement of wet slip resistance.

As mentioned earlier, wet slip resistance can be measured by different methods depending on the surface and location. The Pendulum method could be considered the most versatile and relevant method for most pedestrian situations.

For full article and detailed images please visit:

http://www.stonemtg.com.au/slip_understanding.html