

Help and advice



Martin Cummins on moisture testing

It ain't what you do, it's the way you do it ...and that's what gets results!

THESE are wise words from a song of old that are especially true when it comes to moisture testing.

This year we've looked a lot at change, but one thing that hasn't changed is the British Standard for moisture testing.

British Standards state that a surface hygrometer is the only method that should be used for assessing moisture content, but other technologies and methods have appeared and it is important that you understand what these are, how they work, how they should be used and interpreted, but more importantly, what shortcomings they may have.

■ **Surface hygrometer:** This is what BS specify you should use. You put it down, leave it for the minimum 72 hours, then take a look early in the morning and find it is reading say 90% RH.

You take another reading later that day and the reading has dropped. The natural assumption is that the floor is drying.

However, on returning the next morning you find the reading goes back up to 90% RH. So has the floor really taken more moisture in? The trouble here is that percentage relative humidity (RH) is related to temperature so it is important that when you take your reading you take them under similar conditions.

Although the boxes themselves are designed to be good insulators and do not readily warm up and cool down it is still best practice to test under consistent conditions (ideally 20degC, but how often are sites this warm?).

■ **Protimeter:** Plug and probes methods such as the Protimeter system are increasingly being used. You drill a hole – watch out for that underfloor heating – and place a 40mm pre-formed plastic sleeve into the hole and place a cap on the top.

You then leave it for a minimum 72 hours (not 24 hours as is often believed to be the case) like you would with a surface hygrometer. After this time, take the cap off and place a probe into the sleeve and read the moisture value (%RH) directly from an LCD display. The display reads in %RH so is conveniently reading moisture in the same manner as the British Standard Test.

One of the common mistakes

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made with this method though is not leaving the probe in long enough. You are trying to reach equilibrium so the probe needs to be left until equilibrium is reached, typically this will be about 45 minutes. Far too often people leave it in for five minutes and say that it is dry?

You are also meant to drill to a certain depth. It is not always understood that you are meant to drill to a minimum of 40% of the depth so for a 150mm screed you need to drill to a depth of 60mm and insert an appropriate sleeve.

With most kits supplied with 40mm plugs the reading of this floor will not be accurate. So why do people use this test method?

The sleeves are relatively cheap so it isn't too costly to have lots of tests on the go at any time, it is easy to use and if you can get the main contractor to drill the floor for you then you may only need one site visit.

All benefits aside, it is still not the same as using a calibrated surface hygrometer and may not give the same results.

You should still carry out the proper test, but by all means use the plug/probe for further knowledge or when monitoring the drying out of a slab.

■ **Tramex:** Encounter meters such as those made by Tramex are also a method of assessing moisture. Commonly used in Europe and the USA, they are non-destructive and work by firing low frequency signals from electrodes on the base of the instrument. These are transmitted into the floor and measure the change in impedance caused by the presence of moisture.

The reading is translated by the instrument's electronics into a moisture content reading. It gives a quick, accurate reading enabling you to identify which areas of the

floor are the driest/dampest.

However it does not measure % RH, but gives a percentage moisture. This makes it less straightforward in relating to the British Standard but nevertheless it is a very convenient quick method to be used in conjunction with the surface calibrated hygrometer.

■ **Rubber mat test:** This is low tech, but still useful. Basically cover an area of the floor with a rubber mat, leave for a day or two, then inspect. Check to see if the covered area is colder or damper than the surrounding area.

Although it doesn't provide you with any figures, you'd be surprised just how well an indicator it is, particularly when the client is 'certain' their floor is dry!!

Lifting anything that has been sitting on the floor for a while – a bucket of paint, some insulation board, any impervious material – and it works the same.

■ **Pin Meters:** These are used quite widely in the timber and wood flooring industry; they are also increasingly used to test moisture

in floors. The pin meter assesses the moisture content by measuring the electrical resistance of the floor, two pins are applied to the floor and a small current passed through; the reading gives the moisture content.

However, the drawback with pin meters is that they only tell you what the moisture is at the point of testing, not within the depth of the screed/subfloor. Being a surface reading you are testing what will be the driest part of the floor, so the moisture level indicated will be consequently far lower than what is true for 'the floor'.

They are very useful when it is necessary to test through a resilient floor covering as any moisture will have reached equilibrium underneath the flooring. Care should be taken with any reading, use these only as an indication of conditions.

So whilst there are many moisture measuring methods available, none is really a substitute for the surface hygrometer, although they do have their uses as aids to the overall moisture assessment – such as the floor drying or as a quick indication of the floor's wetness.

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The funny side of flooring



'Tell me Fred, how long have you been working for us, and can you add a week's notice to your answer!'

By courtesy of

