

Help and advice



Peter Grant on benchmarking

OVER the years one question that comes up with a certain regularity concerning the use of moisture meters is: how can I ensure that my readings are consistent and can I trust what the meter is telling me?

Wow! What a can of worms this one is! Yes, yes, I know you were expecting me to tell you that simply owning a state of the art moisture meter and hygrometer is going to banish your moisture woes for ever, but it ain't that simple, as I probably think in your heart of hearts you kind of expected.

I am writing this the day after having presented a BDMA (British Damage Management Association) Master Class on moisture measurement in the built environment.

My brief from the BDMA was to ensure I addressed the correct use of moisture meters in the field, as this one factor alone, accounts for more head scratching and frustrated guess work than any other.

Water loss technicians are no different to floorlayers, or any other interested parties with a brief to measure moisture for that matter, in that, all of us want 'instant' results and the electronic moisture meter appears to give us these in spades. Therein lies the rub of course.

Measuring an atmospheric or material equilibrium relative humidity is, technically, the most elegant solution to our problem. Indeed ERH measurement forms the basis of moisture testing within the current BS8201, BS8203 and BS5325 standards.

These standards, as I'm sure you know, demand the use of a surface humidity box and a suitable hygrometer, either electronic or analogue. Now once again, all technicians charged with measuring moisture find using and understanding hygrometers somewhat of a black art, and it is!

So faced with the 'easy' alternative of the electronic moisture meter, most will gravitate to its use even when using such a tool may be fraught with pitfalls. Remember, the electronic moisture meter is measuring electrical conductivity in the WME (wood moisture equivalent – Protimeter derived) measure or 'pin' mode and electrical capacitance in the non-invasive 'search' or 'relative' mode.

Whilst both of these modes are influenced by moisture load, you must remember that they also react to the inherent conductive properties of the materials themselves.

In some cases, various building materials can be quite conductive in their own right, carbon in PFA and clinker blocks, magnesite and bituminous materials all can give a false trail.

So the golden rule is if you get a high reading, treat it with suspicion until you can corroborate it against either a carbide and/or an ERH test (see – you might as well have done the ERH test in the first place! No, only joking, just).

Ok then Peter, I hear you say, cut to the chase here, what's all this about benchmarking then? Well, the electronic moisture meter is in a sense a benchmarked instrument in it's own right already, in that it can relate electrical properties

All you've wanted to know about moisture meters, but were afraid to ask!



Examples of the moisture meters on the market



to both gravimetric moisture content and the notional ERH value.

If you would like me to send you a pdf document via email illustrating this, do please email me on pgrant@tesco.net.

The point I always make is that the electronic moisture meter is really a guide to what is happening and used with thought it is very useful in helping you make decisions regarding moisture status and the need to utilize a surface DPM system or not.

Developing the theme on benchmarking further, it is always useful to take and note reference readings on a floor substrate suitably cross referenced with either carbide results or more likely, hygrometer readings, which can then be relied on and then used in comparison with further readings taken with the moisture meter alone.

Perhaps one of the biggest faux pas made is placing too much reliance on the non-invasive or search mode on the more sophisticated moisture meters.

Now this is very attractive to use and so leads to questions such as 'I measured the moisture

content of the slab and it was 180 to 200 on the meter, is this OK?' Don't do it guys! Not at least without benchmarking first, I should say.

One of the problems that can be encountered with non-invasive techniques is that of getting a handle on say a timber floorcovering over a sand/cement or concrete sub floor.

Now whilst the pin mode will give you accurate results in the timber, it is not acceptable for you to turn Mrs Smith's wonderful parquet floor into a replica darts board, so the use of capacitance mode moisture meters is really called for, but how can you be sure you are just getting the steer from the wood alone?

Well, one manufacturer to come up with an answer on this is Tramex and their MRH meter, which can be adjusted for material density in the non-invasive mode. This allows a benchmark reading to be set.

The technique is to use the pins to establish an accurate timber reading and then to take a capacitance non-invasive reading at the same point. The density setting is then adjusted until the reading corresponds with the original pin reading. The rest of the floor can now be examined non destructively, the benchmark now having been set. The same technique can be applied to other meters on the market but you may have to carry the "adjustment factor" in your head.

Remember, do feel free to contact me, particularly when the going gets tricky, directly on either 07885 221675 or pgrant@tesco.net. You can also now access my web site for advice and fact sheets on www.moisturemeasurementservices.co.uk.

Until next month, stand by your meters and get benchmarking! **CFJ**

Peter Grant is an independent moisture measurements consultant working with Martin Lishman. He also instructs on moisture related courses throughout the country. ■ T: 01780 410588

■ M: 07885 221675

■ E: pgrant@tesco.net