What is a Moisture Meter Reference Scale and how do I Interpret it?

When you use a purpose-built moisture meter for wood, soil, hay, drywall, or any other specific material, that meter returns readings on a scale calibrated for that one type of material. Using moisture meters that are calibrated to provide readings on a single scale (such as wood scale, hay scale, or drywall scale) allows you to get quantitative readings of the material for which the meter is calibrated.

However, what about all of the materials for which a given moisture meter is not specifically made to measure %MC in? For these other materials, many moisture meters incorporate a reference scale setting.

What is a Reference Scale?

The term reference scale is used for a moisture meter reading mode wherein the meter takes qualitative readings as opposed to quantitative readings. These readings are shown as a numerical value which the user can then use to estimate whether that material is "wet" or "dry."

It is important to note that the numbers used in a reference scale are not indicative of a specific percentage of moisture content. Instead, reading results in the reference scale are used as a relative indication of how much moisture a material has in it.

For example, say you have two different moisture meters. One meter might have a reference scale setting that displays moisture values from 0-300, while the other one goes from 0-100. While it might be tempting to think of readings on the 0-100 reference scale meter as percent values, they are not. A reading of 12 on a 0-100 scale does not mean that the material has 12% MC, it just indicates that the moisture content is relatively low.

The primary use of the reference scale setting on a moisture meter is to give it utility beyond reading moisture in one kind of material. Using a reference scale, you can get a general idea of the moisture content of different materials

Interpreting Reference Scale Readings

One of the best ways to use a reference scale meter is to take a reading from an unaffected sample of material that is known to be dry first. Once you have a reading from the "dry" sample, use that reading as the baseline for the readings you get for that material for the rest of the job.

For example, if your dry material (carpet, for example) reads 33 on a 0-100 scale, then you know that if another sample of the same type of material on the jobsite reads 56, then that second piece of material has too much moisture to be considered dry for that job.

This process of sampling a dry material to compare to compare the dry reading to other readings of the same material should be done for each different material being tested on the job, each time you are at a new jobsite. Also, if you are testing for moisture in both interior and exterior environments, take reference readings for materials in both areas. The reason for this is that any given material might reach its equilibrium moisture content at different levels depending on the humidity of the environment, which may change slightly from one jobsite to the next, and greatly from interior to exterior environments.

Additionally, for restoration work, you may want to redo the reference reading with each new day, as the ambient humidity of a structure will change as dry out efforts progress.

Another way to use the reference scale is as a quick "wet or dry" indicator for materials. On some analog moisture meters, the display has a color-coded indicator. For example, on the TechScan pinless meter, the colored sections are:

- **Green** - Indicates relatively low moisture.
- **Yellow** - Indicates some moisture, enough that material may be at risk and needs to be tested with a dedicated meter or some other accurate method.
- **Red** - Very high moisture content, item is waterlogged.

Although these readings are relative, when a meter response is extremely high, that is a good indication the material is moisture-compromised.

Overall, while the reference scale is not a precise scale for measuring moisture in any specific material, it's versatility in being able to allow you to get a qualitative measurement in many different materials makes it highly useful for professionals who work with a variety of materials on the job, such as restoration experts or building inspectors.

Learn more about moisture meters and how they work by getting a free copy of our "Moisture Meters 101" guide at the link below:

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