

YORK Survey Supply



Nothing else measures up!

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General Purpose Moisture Meter



Code: 356100

Operating Instructions

General Purpose Moisture Meter

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Remove the cover from the instrument. The instrument will automatically turn on, the LCD will illuminate. You are now ready to measure moisture. Apply the probe tips firmly to the surface to be measured.

Interpretation of Readings

The instrument measures free water in a material, closely indicating the relative dampness of different materials. Although not measuring relative humidity, the instrument gives readings that are comparable. Therefore, any high readings (in the absence of contaminating salts or carbonaceous materials) indicate a damp condition of approximately equal significance in wood, brick, plaster or wall board, regardless of their different moisture contents. The Moisture Meter is scaled with this in mind so that it can be used to measure moisture in a variety of materials. The meter is scaled as follows:

Wood scale	6% to 44%
WME reference scale (building materials other than wood)	0.2% to 2.0%

Guidance Notes

The Moisture Meter measures the electrical resistance of a material and provides an indication of the moisture content of wood (wood scale) and the Wood-Moisture-Equivalent (WME) in materials other than wood. Readings indicate a dampness condition of approximately the same significance in wood, brick, plaster, etc., even though the actual moisture content will be different. Problems arise from the 'structure' of the material being tested, the presence of other conductive material that may affect the reading and also the correct method of testing. Factors that may effect readings include:

- Density of the material - this is important when interpreting the moisture content that is acceptable in a particular material. Even the 'same' material will be variable in composition from one example to another.
- Ability to absorb moisture - materials will have different capabilities to hold moisture.
- Conductivity of substance - most materials have an inherent conductivity even if this may be negligible. Conductivity may be affected by carbonaceous or ferrous material content.
- Purity of free water - the conductivity of water varies with it's purity.
- Surface treatment - certain surface treatments may be conductive. Residues may contain carbonaceous material or have a misleadingly high moisture content. Wood treatments of a salts based liquid will also affect conductivity.
- Temperature - the electrical resistance at any given moisture content increases as the temperature decreases.
- Timber grain - due to the cellular structure of timber, readings will be less accurate taken in the end grain.
- Timber adhesive - composite materials such as plywood will give artificially high readings due to adhesive content.
- Homogeneity - different densities in materials, i.e. knots in wood will produce erroneous results.
- Electrical contact - it is important to maintain good contact between the pins and the measured substance. Hard surfaces may require 1.2mm diameter holes to be drilled.
- Moisture gradient - the moisture content of a material may vary across it's section.

As a general rule of good practice, results should be obtained from different areas of the material. If in any doubt the Oven Dry test method should be used, i.e.:

$$\frac{\text{Original Weight} - \text{Oven Dry Weight}}{\text{Oven Dry Weight}} \times 100 = \text{\%age Moisture Content} = U$$

Testing and calibration of moisture meters is carried out using electrical resistance as the basis for measurement. Standard resistance values are verified by empirical testing in accordance with OIML R 92. Wood moisture meters - verification methods and equipment: general provisions, issued by Organisation Internationale De Métrologie Légale, - 1989.

In conclusion, it must be reiterated that the meter reading is only a guide as to the 'dampness' of the material under test. Knowing the actual moisture content does not indicate whether that material is 'dry' or 'wet'.

Probes

Clean area in between probe pins regularly with a clean dry cloth.

Battery Replacement

Replace the batteries (3x CR2031) immediately the low battery warning symbol appears in the LCD or when the LCD fails to illuminate. The batteries are located at the rear of the instrument, unscrew the screw and replace the batteries.

EMC/RFI

Instrument readings may be affected temporarily, if operated within a radio frequency electromagnetic field strength of approximately 3 volts per metre.

Calibration Check

The instrument is supplied with a probe tip cover which is a dual purpose, it protects the moisture meter pins when not in use and incorporates tow test functions, battery check and a calibration test point 27% ±2% (scale 1 - wood scale).

