PalletLink Datasheet

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INTRODUCTION TO MOISTURE METERS FOR WOOD

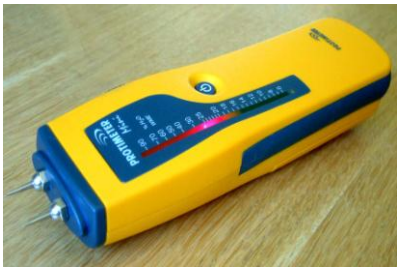

Fig 1: Protimeter *resistance type* pocket size moisture meter

About one-half of customer related problems with wood pallets and packaging are problems related to wood moisture content. It is therefore essential for sawmills and suppliers to be able to measure moisture content since many packaging customer requirements specify maximum wood moisture content. Manufacturers also need to be able to spot-check moisture content in wood on delivery and again spot-check after manufacture. With all sawn and planed wood products this can be a very rapid task taking only seconds using a battery operated wood moisture meter.

High moisture content can lead to moulds, stain, decay and wood shrinkage in customers' goods. All can cause complaints and manufacturers may often be considered contractually liable for this. For sawn timber, reading the level of wood moisture content is rapid if using the type of pocket size battery operated wood *resistance-type* moisture meter shown in Figure 1. This type of moisture meter works on the resistance principle where two needle probes are pressed into the wood surface and the amount of electrical current passing indicates the moisture content. A good resistance type meter measures the range 10-30% (very dry to very wet) which is the range of greatest interest. Sawn wood gives accurate readings but not wood-based processed materials, such as chipboard, waferboard, mdf and plywood. These are not suitable for measurement *by any electrical wood moisture meter* due to complex adhesives used by wood-based processed material manufacturers. Such products conduct electrical current at widely varying levels.

If using a moisture meter frequently, to avoid operator strain at height and reach and speed up measurements, a remote hand-probe on a flexible lead is often used One version which plugs into the moisture meter is shown in Figure 2.

Beware of cheap moisture meters, many of which are highly inaccurate, this makes them worse than useless because an apparent reading of say, 19% (that is really 23%), will lead to a false sense of security as regards wood being below the *decay safety line of 20%*. To ensure accuracy keep moisture meters in calibration. If your company is accredited to ISO 9000 you are obliged to keep measuring equipment in calibration. Such calibration should be done by a specialist company but to avoid sending a meter away at inconvenient times, then an in-house calibration instrument known as a *checkbox* (shown in Figure 3) is recommended. This electronic device which simulates a softwood specimen at precise moisture contents was developed by TRADA in 1982 and it determines moisture meter accuracy by checking it at 3 key points. For more details see the Verus website

Fig 2: Protimeter *Heavy Duty Hand Probe*

Fig 3: Verus Instruments *Calibration Checkbox*

For companies needing to take deep readings in sawn timber (say in sawn pallet blocks or packing case skids) a special plug-in hammer probe accessory is available with long insulated pins which can make readings up to 40mm deep, for details see the Verus website

- A *resistance-type* moisture meter should always be available in the production workshop/and on site
- All moisture meters in use (and *calibration checkboxes*) should be recently and traceably calibrated
- The Company Quality Controller should make frequent periodic calibration checks on in-use moisture meters
- In-process/despatch records of wood moisture content should be retained to demonstrate compliance/fault find

Photographs by courtesy of Protimeter® plc and Verus Instruments Ltd