



PCE Americas Inc.
711 Commerce Way
Suite 8
Jupiter
FL-33458
USA
From outside US: +1
Tel: (561) 320-9162
Fax: (561) 320-9176
info@pce-americas.com

PCE Instruments UK Ltd.
Units 12/13
Southpoint Business Park
Ensign way
Hampshire / Southampton
United Kingdom, SO31 4RF
From outside UK: +44
Tel: (0) 2380 98703 0
Fax: (0) 2380 98703 9
info@pce-instruments.com

www.pce-instruments.com/english
www.pce-instruments.com

Concrete Moisture Meter FMW-B to measure humidity in wood without any damage or punctures in the material

The Concrete Moisture Meter FMW-B of wood FMW-B determines moisture content by means of the capacitive method. In the Concrete Moisture Meter an electromagnetic field quickly determines capacitance of wood. The moisture content in the wood is internally determined by means of a gross density. The Concrete Moisture Meter FMW-B has three important advantages:

- It measures moisture content without damaging wood when it is placed on it
- Measurement results are quickly displayed.
- Because of the high accuracy of humidity values a drying test will not be needed (real absolute humidity is measured / the Concrete Moisture Meter meets with all the European standards EN 13183-1, EN 13183-2, EN 13556)

This Concrete Moisture Meter is very easy to use as well as very robust. The Concrete Moisture Meter FMW-B is an irreplaceable tool for both wood manufacturing and purchasing as well as for any professional sector where wood is considered a raw material. It is also capable of measuring a wide range of wood types (gross densities are stored in the detector).

Three-step measuring process:

- Turn-on and zero setting.
- Fitting of wood thickness (selected from memory).
- Measuring and reading of moisture content.

Adjustments:

- MAX, memory or Scan mode.
- Entry of the specific weight of wood from 250 ... 1100 kg/m³ in 10 kg intervals.
- Relative values for building materials.

Functionality

The Concrete Moisture Meter FMW-B for wood is guided by a microprocessor-unit to quickly determine moisture content in wood and building materials. The Concrete Moisture Meter FMW measures moisture content when the lower frontal sensor is placed on the material for half a second. It is also possible to measure through paper or paints. After introducing the unit weight (gross density) of any wood type, absolute humidity can be highly precisely determined in all wood types. With the Concrete Moisture Meter, moisture content can be measured in many different wood types from 250 to 1100 kg/m³ (see chart below).

Humidity is determined by contact using a high-frequency technique. Measurements can be taken without damaging the material surface. Therefore, this detector is used specifically for finished products or for fast controls on site.

Put the Concrete Moisture Meter on the wood. Radiation penetrates wood up to a depth of 25 mm to measure absolute humidity.

Characteristic density curves of wood are stored in the Concrete Moisture Meter and can be selected very easily. Humidity can be determined for a specific wood type with high accuracy.

Characteristic curves of wood and basic instructions for measuring

Below you will see an extract of the characteristic curves in alphabetical order of all the most important wood types (they are stored in the Concrete Moisture Meter). We can also send another list with more wood types.

Softwood

- Fir
- Canadian Fir (east, west)
- Agathis (heavy, light)
- Alcere
- Alerce (European, Japanese, Russian)
- Alerce (American, East, West)
- Red Cedar
- Douglasie (heavy, light)
- Mañio
- Pine (European, Nordic)
- Pine (light, heavy, Caribbean, American)
- Pine (European, Nordic, Kern, Spint)
- Pine (French)
- Pine Parana
- Pine Radiata
- Pine Sitka
- Pine Sugar
- Pine Weymouth
- Yellowwood
- Redwood (Californian, heavy, light)
- Sugi

Deciduous wood

- Abachi
- Abarco
- Birch (European)
- Abura
- Afrormosia
- Poplar
- Alone
- Amburana
- Avodire
- Baboen
- Balsa
- Bilinga
- Bodo
- Bomanga
- Bonkonko
- Bosse
- Mahogany (Bassam, Honduras, sapeli, sipo, tiama)
- Chestnut (noble)
- Cherry-tree (European, American)
- Cedar
- Poplar
- Keruing (light, heavy)
- Dabema
- Danta
- Dibetou
- Durian
- Essessang
- Framire
- Freijo
- Ash (European)
- Fuma

Attention: All the characteristic curves of the wood types of this column and the adjoining one are stored inside the Concrete Moisture Meter FMW-B. They can be displayed by introducing the corresponding gross densities. A chart with all the materials and wood types will be included in the delivery.

To take into account:

When measuring moisture content in wood, the result will be more accurate on smooth surfaces. Moreover, the measuring

value will grow on chips or knots. On the contrary, if measurements are taken on breaks, the humidity value will be lower in relation to the real humidity value (absolute humidity). In both cases, you should measure near the area which is going to be measured.

Measurement accuracy:

Wood has an inhomogeneous composition. Therefore, oscillations in gross density can appear while measuring the same wood type. You will have to take diverse humidity measurements and the overall measurement result will be the mean value calculated by the Concrete Moisture Meter.

Wood surface:

In rough surface wood types, the result displayed in the Concrete Moisture Meter can be lower than the real value.

Fiber direction:

The result will not be affected if measurement is taken either in the fiber direction or against fiber direction.

Measurement depth:

The measurement depth is 25 mm. If the wood is very thin (e.g. < 1 cm thickness) measurement will be carried out through the wood. The material on the wood will also be measured partially.

Measuring surface:

During the measurement, the measuring surface of the Concrete Moisture Meter has to be completely on the surface which is going to be measured in order to avoid mistakes with results.

- Beech (European, vaporized, non-vaporized)
- Igaganga
- Ilomba
- Iroko
- Jelutong
- Kapur
- Kosipo
- Krappa
- Kwarie
- Lauan (red)
- Limba
- Makore
- Mansonia
- Matakki
- Matoa
- Mengkulang
- Meranti (dark red, light red)
- Movingui
- Muninga
- Niangon
- Walnut (European, American)
- Satin walnut
- Oega
- Elm
- Okoume
- Padouk (African)
- Pear tree
- Peroba
- Peroba (pink)
- Banana tree
- Possentrie
- Ramin
- Oak (European, light, heavy, American, white, red, Japanese)
- Tasmanian Oak
- Willow
- Sapupira
- Sen
- Sepetir- Seraya (red, white)
- Soemaroepa
- Tabaca
- Tchitola
- Teca
- Lime tree
- Tola branca
- Wane
- Yang

Building materials

For building materials it is possible to introduce "0" value. For this Concrete Moisture Meter there is only a single

characteristic curve (mean characteristic curve). With the Concrete Moisture Meter FMW-B you will be able to easily determine humid zones in floors, walls, etc for a relative measurement in wet or weak areas.

Technical specifications

Measurement ranges	2 ... 30 % H ₂ O for wood 0 ... 60 % H ₂ O for building materials.
Resolution	0.1 %
Accuracy	0.5 % (of the reference material)
Measurement depth	adjustable from 10 to 30 mm (1 mm intervals)
Measuring principle	capacitive measurement (without contact)
Memory	50 measurement values, maximum value displayed (Max Hold function)
Temperature range	0 ... 50 °C
Power	1 x 9 V battery selectable Auto Power Off to protect the battery
Dimensions	180 x 80 x 35 mm
Weight	260 g battery included

Delivery contents

- 1 x Concrete Moisture Meter FMW-B,
- 1 x battery
- 1 x protective cover
- 1 x user's manual
- 1 x additional indications to measure humidity

