

BIO MOISTURE

wile

Moisture meter for wood chips



Operating instructions

OPERATING INSTRUCTIONS FOR BIO MOISTURE

1 Content of the delivery

- Wile Bio Moisture-meter and W 253 dish probe
- Carrying case
- Operating instructions
- 9 V 6F22 battery (installed)

2 General

Bio Moisture measures the moisture content of different sorts of wood chips that are typically used as solid fuels in different power plants. The meter can measure common sorts of wood chips, from coarse chips to fine logging residue chips. The measurement range extends up to 70% of moisture.

The meter shows the moisture content of the material in weight percent.

Measurement range for wood chips is 12-40% and logging residue chips 30-70%.

Method of moisture content definition is based on the technical specification **CEN/TS 14774-1:2004** that is used in the European Union.

3 Measurement

3.1 General

You can measure the moisture content of the wood chips directly from the storage heap or from the load. It is also possible to gather the sample of the material into a plastic bucket and make the measurement in it.

You can ensure that the measurement result represents the average quality of the whole mass by making the measurement from different places of the mass. Make several measurements if needed.

The measurement itself happens in a ball-shaped zone, that is situated between the metal tip of the probe and the dish part. The diameter of the measurement zone is about 20 cm.

The quality of the wood chips affects the measurement result. Using

the pictures in the appendix and the description in paragraph 4, define what sort of the wood chips described is the closest one to the material you are going to measure. Choose the measurement scale according to the kind of wood chips.

Paragraph **3.3 Measurement step by step** contains the important notice on possible risks of measuring moisture content in frozen wood chips.

3.2 Preparation for the measurement

In order to make the transportation easier the dish probe is delivered in the carrying case disassembled. Assemble the dish probe according to the picture (see picture 3.2 in the appendix) and fix it to the connector on the top of the meter. Now the meter is ready for use.

Before carrying out any measurements and every time before measuring the new/different sort of wood chips choose the appropriate scale.

Switch on the meter with a single press on the **ON/OFF-** button. The number of the used scale will appear on the meter's display. When the number of the scale is displayed, you can change the scale by pushing the **MENU-** button:

- 1- scale for wood chips
- 2- scale for fine logging residue chips
- 3- scale for medium coarse logging residue chips
- 4- scale for coarse logging residue chips

After you have chosen the correct scale, you will see **run** on the display and in a moment the meter will go off. Now the meter is ready for use.

The setting of the scale is permanent, it will stay the same until you change it yourself.

-0- scale is used by Wile service department to calibrate the meters.

The description of the above mentioned sorts of different wood chips is presented in paragraph 4.

3.3 Measurement step by step

If you are going to measure from a storage heap or from the load,

remove some material from the surface. The top layer can be drier because of the sun or more wet because of raining.

In winter top layer of the uncovered heap of wood chips can be deeply frozen. **Never measure moisture content in frozen wood chips.** When measuring moisture content in frozen wood chips the measurement result is incorrect. Remember that all the storage heaps of wood chips are always melted from the inside. Take the sample of wood chips from the inside of the storage heap and take the measurement on it.

Push the tip of the probe into the storage heap, so that the dish of the probe is firmly in touch with the wood chips.

Important: Keep the meter firmly pressed against the material during the whole measurement.

Switch on the meter with a single press on the **ON/OFF**- button.

The number of the selected scale will appear on the display. After that the meter proceeds to the measurement. You will see **run** on the display during the measurement. The result of the measurement (moisture content) will be displayed in weight percent. After the measurement the meter will automatically go off and will be ready for a new measurement.

3.4 Processing the result

3.4.1 Automatic average calculation

The meter can calculate the average value of several measurements. After you have made the measurement, the result can be saved for the average calculation.

Saving the measurement result for the average calculation

Make the measurement as usual. When the result is displayed, push shortly the **MENU**- button. **A** will appear on the display and the meter will add the measurement result for the average calculation. The average calculation is ready when two numbers, for example **A05** and **25,6**, appear alternating on the display.

In this case **A05** means, that the number of measurement results included into the average value is 5. Number **25,6** is the average value of those 5 measurements.

If you do not want to include the measurement result into the average calculation, don't make anything after the measurement, just wait until the meter automatically goes off and is ready for the next measurement.

Before calculating the average value of every new lot of material, make sure that average calculation memory is empty and erase it if needed.

3.4.2 Erasing the average calculation memory

Push and hold the **MENU-** button. Switch on the meter with a single press on the **ON/OFF-** button.

When you see **A** on the display, release the **MENU-** button. If the average value appears on the display now, you can erase it by pushing and holding the **MENU-** button. The memory is erased, when **0** appears on the display.

Note! Always remember to erase the average calculation memory after the measurement series so that the previous average value will not affect the average value of the new lot.

Average calculation memory can accommodate maximum 99 results. If no more results can be added to the memory, the number on the display will start blinking.

3.4.3 Adjusting the result

If the quality of the measured material is different from normal, the result can be incorrect. You can adjust the result shown by the meter to conform with a reference value.

- Adjusting the value upwards

When the measurement result is displayed make the double press on the **MENU-** button. **Three bars will appear on the upper edge of the display. Wait for a moment and the result appears on the display again.** Now each time you push the **MENU-** button, 0,1 moisture % will be added to the result.

- Adjusting the value downwards

When the measurement result is displayed, push the **MENU-** button for three times. **Three bars will appear on the lower edge of the display. Wait for a moment and the result appears on the display**

again. Now each time you push the **MENU-** button, 0,1 moisture % will be deducted from the result.

Note! This adjustment is specific to the used scale. In other words there may be defined specific adjustment for each scale.

3.4.4 Erasing of the scale adjustment

When the moisture content result is displayed, you can erase the adjustment. To do that push and hold **MENU-** button for about 6 seconds. When the result value on the display changes, you know that the adjustment has been erased.

Please note: Usually the moisture in wood chip heaps is not evenly distributed. Make always several measurements to get a proper average moisture reading for the heap.

4 Description of the different sorts of wood chips

4.1 Wood chips – scale 1 (see pictures 4.1 in the appendix)

Some centimeters long pieces of wood, that can be made from many different types of wood: tree trunks, decayed trees, pallets etc. Usually the material is rather dry, often drained under some shelter in the open air.

4.2 Logging residue chips, fine – scale 2 (see pictures 4.2 in the appendix)

Mass of wood chips containing needles, small parts of branches and so on. **Usually the mass contains different sorts of rot materials and needles from the soil, often decayed pieces as well.**

4.3 Logging residue chips, medium coarse – scale 3 (see pictures 4.3 in the appendix)

Sort of wood chips containing needles and parts of branches. This sort is coarser than the previous one. **Usually this sort of wood chips contains much needles.**

4.4 Logging residue chips, coarse – scale 4 (see pictures 4.4 in the appendix)

Usually contains big, sometimes longer than 10 cm, parts of tree branches or tops of trees. Needles and smaller parts of wood are presented in the mass as well. May also contain parts of birch and fir bark.

5 Maintenance of the meter and battery replacement

5.1 Battery

The meter runs on 9V battery of the type 6F22. The battery is included in the delivery and is ready for use.

The meter gives a warning about the low battery voltage with **LOBAT**-text in the left upper part of the display. If the battery is almost empty, the display will show some random marks and LOBAT text can fade.

The battery box is situated in the bottom of the meter. Open the box by pushing the locking lever over the battery symbol as shown in the picture (see picture 5.1 in the appendix) and replace the battery.

Remove the battery from the meter, if the device is not used for a long period of time. To ensure the correct functioning of the meter replace the battery regularly. If you suspect a fault in the meter, always test the battery first. Please note, that a battery slowly discharges itself even if the meter is not used.

5.2 Warranty and the maintenance of the meter

All Wile products carry a 12 month manufacturer warranty for materials and workmanship. The warranty is valid for 12 months from the date of purchase on the receipt. To claim the warranty, the customer should return the defect product to the Manufacturer, reseller, or the nearest Wile Service Partner. The warranty claim must be accompanied by the description of the fault, sales receipt and customer's contact information. The manufacturer / Wile service partner will repair or replace the defect product and return it as soon as possible. The liability of Farmcomp is limited to the price of the product in maximum. The warranty does not cover any damage that is caused by incorrect or careless use of the product, dropping the product or damage that is caused by repairs that are carried out by non-authorized personnel. Farmcomp does not accept any responsibility for any direct, indirect or consequential damages that are caused by the use of the product or the fact that the product could not be used.

The meter does not require any special service.

The meter can be cleaned with wet or dry fabric. Do not use any

detergents or other strong cleaning substances. Do not put any liquids inside the meter.

Keep the meter in a dry place, preferably in room temperature. Prevent the meter from falling and getting wet.

If you suspect a fault in the meter, please always test the battery first. If the meter requires repair, contact your local Wile reseller for assistance. Wile moisture meters can be calibrated and repaired only by Farmcomp and authorized Wile service partners.