

















# MOISTURE ENCOUNTER ME5



- ME5 -

## USER GUIDE

## TABLE OF CONTENTS

Introduction.....	2
Shallow-Depth Functionality.....	3
Instrument Features.....	4
Operating Instructions.....	5
Scales and Sensitivity.....	6
<b>Working With your Moisture Encounter ME5 - SCALES.....</b>	<b>7</b>
•  Scale 1: Wood - Timber.....	8
•  Scale 2: Shallow Depth.....	8
•  Scale 3: Drywall (Comparative).....	8
•  Scale 3: Roofing (Comparative).....	9
•  Scale 4: Plaster (Comparative).....	9
•  Scale 4: Tile (Comparative).....	9
•  Scale 5: Masonry (Comparative).....	9
<b>Working with your Moisture Encounter ME5 - MATERIALS.....</b>	<b>11</b>
•   Wood and wood products Scales 1 & 2.....	11
• %MC Wood Flooring Scales 1 & 2.....	12
• Carpet, Vinyl & Low Density Coverings (Comparative).....	12
•  Drywall (Comparative) Scale 3.....	13
•  Roofing (Comparative) Scale 3.....	13
•  Plaster (Comparative) Scale 4.....	13
•  Tile (Comparative) Scale 4.....	13
•  Masonry (Comparative) Scale 5.....	14
<b>Working with your Moisture Encounter ME5 Readings and SG Tables.....</b>	<b>15</b>
• Notes on Specific Gravity (SG).....	15
• How to use the Wood SG Tables.....	16
• Wood SG Table, 5% to 17% meter reading.....	17
• Wood SG Table, 18% to 30% meter reading.....	18
• Relative humidity and moisture content.....	19
Limitations.....	20
Calibration.....	20
Warranty.....	20
Warranty Claims.....	21
Product Development.....	21
Safety.....	21
Contact Information.....	22

## INTRODUCTION

Thank you for trusting our brand and choosing the Moisture Encounter ME5 from Tramex. It is our goal to ensure that you are always happy with your Tramex products, so please let us know if you have any questions and rest assured, we are always here to help..

The Moisture Encounter ME5 enables non-invasive moisture measurement and detection in a wide range of building materials. The instrument operates on the principle that the electrical impedance of a material varies in proportion to its moisture content.

To measure/detect moisture, the three coplanar conductive rubber electrodes mounted on the base of the instrument case are lightly pressed onto the wood or material sample. The instrument measures the electrical impedance of the sample by creating a low frequency alternating electric field between the electrodes. This non-destructive field penetrates the material under test to a depth of approximately 30mm (1 1/4 inches), or 10 mm (0.4 inches) in Shallow Depth mode. The very small alternating current flowing through the field is inversely proportional to the impedance of the material. The instrument detects this current, determines its amplitude and, after processing, drives the pointer of the moving coil meter to the computed moisture value.



As there is a wide variation in the nominal electrical impedance of different material types, the instrument is provided with five selectable scales with different sensitivities, which are optimized for testing:

1. Wood, Timber
2. Shallow Depth
3. Drywall, Roofing
4. Plaster, Tile
5. Masonry



By selection of an appropriate scale, the instrument can also be used for the detection and location of elevated moisture in or behind a range of covering materials such as wall, floor and ceiling tiles, siding, carpet and laminated floor coverings.

---

## SHALLOW-DEPTH FUNCTIONALITY

The ME5 incorporates **non-destructive dual-depth** functionality.

The **regular** non-destructive penetration depth is 30mm (1 ¼ inches) when using:

Scale 1 - Scale 1 - Wood, Timber; (5 - 30 WOOD %MC);

Scale 3 - Drywall, Roofing; (0 - 100 COMPARATIVE)

Scale 4 - Plaster, Tile; (0 - 100 COMPARATIVE)

Scale 5 - Masonry. (0 - 100 COMPARATIVE)

(The depth of field penetration will depend on the density of the material being tested.)

The Shallow Depth scale 2 is designed to have a field penetration of up to 10mm (0.4 inches).

Shallow depth penetration allows for:

- the reduction and elimination of substrate influence when testing the moisture conditions of the coverings, and an analysis of 'surface' versus 'surface + core' moisture,
- greater accuracy and precision of the readings within the coverings or materials. This accuracy and precision of the non-destructive shallow-depth scale is comparable to actual pin readings and therefore similar to a Wood Moisture Equivalent WME reading.
- When testing wood with the Shallow Depth scale % moisture content measurement readings can be taken from the top 5 - 30 WOOD %MC scale.
- When testing non-wood materials, the readings are not % moisture content measurements, but are comparative and can either be taken from:
  - the 5 - 30 scale and considered as similar to a Wood Moisture Equivalent WME comparative reading, or
  - the 0 - 100 COMPARATIVE scale.

### NOTE:

As the shallow depth scale is calibrated to read %MC in wood and a reading that can be considered as similar to WME in non-wood materials, it does not have the same sensitivity as Scales 3, 4 and 5. Therefore, the user should expect some difference between readings taken from the 0 - 100 scale in regular depth mode and the 0 - 100 scale when in shallow depth mode.

Best practice is to choose your scale, find a 'known dry area' (baseline) value for the material under test, and compare readings across the material to that 'known dry area' (baseline) value.

### NOTE:





While the Shallow Depth scale 2 reduces or eliminates the influence of any substrate beyond 10mm (0.4 inches), the regular depth does not eliminate the surface coating. The regular depth gives readings from the surface to a depth of up to 30mm (1 ¼ inches).

## INSTRUMENT FEATURES

Your Moisture Encounter ME5 employs advanced analog and digital technology to enable the incorporation of the many features listed below:

- There are 2 scales on the meter face. A '5 - 30' Wood Scale and '0 - 100' Comparative Scale. Refer to the top 5 -30 Wood scale when measuring moisture in wood using Scale 1 - Wood, Timber; or when measuring wood using Scale 2 - Shallow Depth. Refer to the bottom Comparative Scale when testing all other materials in regular depth mode. The 0 -100 scale can also be referred to in shallow depth mode, or the 5 - 30 scale can be used for a Wood Moisture Equivalent WME reading.







- Four simple pushbutton controls:
  -  ON/OFF
  -  SCALE
  -  HOLD/AUDIO
  -  Bluetooth
- Non-destructive moisture readings taken in wood from 5% to 30% are displayed on a moving coil meter with linear scale.
- Audio signal sounds when meter indicates high reading.
- Comparative readings between zero and 100 can be taken in or through drywall, ceramic or porcelain tiles, carpet, floor coverings, roofing, plaster, and other materials such as brick and cement block.
- Automatic supply timeout (5 minutes) conserves battery life.
- Bluetooth connectivity.
- Supply timeout is automatically extended if a change in meter reading is detected or if any button is pressed.
- 10 second bleep warning on instrument sounder prior to end of supply timeout period.
- Last used scale is memorized at supply timeout and automatically selected next time ON/OFF button is pressed. If Bluetooth was selected prior to the Moisture Encounter ME5 automatically powering off it will be restored next time ON/OFF is selected.
- LEDs illuminate for selected scale.
- HOLD/AUDIO button freezes moving coil meter and LED will flash. HOLD facilitates readings taken out-of-sight.
- If HOLD/AUDIO was selected prior to supply timeout, the frozen meter reading is digitally memorized and restored next time ON/OFF is selected.
- If the battery voltage is getting low, the five LEDs flash sequentially for a short period. The instrument will continue to operate for some time but it is recommended that the batteries be changed as soon as convenient.

OPERATING INSTRUCTIONS

The instrument face with brief notes on the push button controls and LED indicators is shown below.



- 1 = Moving coil meter.
- 2 = LED Scale Indicators.
- 3 =  Bluetooth ON/OFF
- 4 = Bluetooth LED
- 5 =  Hold/Audio.
- 6 =  Power ON/OFF.
- 7 =  Scale Select.







## SCALES AND SENSITIVITY

Scales 1 and 2, when used with wood, will give a %MC reading.



Scales 3, 4 and 5 have a preset sensitivity appropriate to the density of the materials indicated.

## OPERATING INSTRUCTIONS

1. Press the  ON/OFF button to power up. The LED for the last used scale will light.
2. To change the scale, press the the  Scale Select button until the LED opposite the required scale lights.
3. Hold your Moisture Encounter ME5 directly on the material being tested ensuring the electrodes on the base are fully in contact with the surface. The meter should be held by the rubber grips when taking readings. It is advised to not slide the meter across the surface under test. Place the meter on the surface, record the reading, lift and repeat.
4. For wood or wood products read the moisture content from the upper line (Wood) of the meter dial which is marked from 5% to 30%. Audio signal will sound when meter indicates high reading.
5. To turn audio signal on or off, press  HOLD/AUDIO button twice in quick succession.
6. To turn Bluetooth On/Off, press the  Bluetooth button. The blue LED will illuminate when on.
7. For drywall, roofing, plaster, tile or masonry comparative readings are taken from the lower line on the meter dial, which is marked from 0 to 100.
8. The instrument will automatically power-off after five minutes if no button is pressed or if no change in meter reading is detected. If a button is pressed or the meter reading changes, the power-off will be extended for a further five minutes.
9. To freeze readings press the  HOLD/AUDIO button once. While on Hold, the LED for the selected scale will flash slowly. This facility is extremely useful if readings are being taken in areas where it is difficult to see the instrument dial. To remove freeze, press the  HOLD/AUDIO button again.

It is advised to not slide the meter across the surface under test. Place the meter on the surface, record the reading, lift and repeat. Slide Protectors are provided to protect the electrodes and also available online at [tramexmeters.com](http://tramexmeters.com) (Product Code: MESP)

**SCALES - WORKING WITH YOUR MOISTURE ENCOUNTER ME5:****Note - Scale Choice, Material density and Scale Sensitivity:**

It is important that the appropriate scale is used for the type of material being tested. This ensures that the most accurate and meaningful readings are obtained. The scale descriptions on the instrument show the material density types that the meter scales are calibrated to. These should be used as a guide, for example, the least sensitive Scale 5 should be used for more dense materials.

Firstly, find a 'known dry area' and choose the meter scale that gives a reading closest to zero on the dry area, but not zero, on the 0-100 REL scale, or closest to 5, but not 5, on the 5-30 %MC scale. This indicates that the meter is detecting and also has the range to detect higher moisture levels in other areas. Then, use the meter across the area under test on a comparative basis to locate higher moisture readings, compared to the known dry area baseline reading.

**Note - Depth of Non-Destructive Penetration:****Depth of non-destructive Penetration field of each Scale 1,3,4 and 5**

Depending on the density of the material being tested, these fields penetrate the material under test to approximately 30mm (1 1/4 inches) from the surface. When testing thin materials such as wood veneers it is recommended that they are stacked to at least that thickness.

**Depth of Penetration field Scale 2 Shallow Depth**

The shallow depth scale 2, field depth of penetration is reduced to approximately 10mm (0.4 inches) also depending on the density of the material.

Use Shallow Depth scale in conjunction with all scales and materials to get a more complete understanding of the moisture distribution at different depths both within the materials, and within and behind the materials.

**Place, Lift, Place. Do not Slide.**

It is advised to not slide the meter across the surface under test unless using the Slide Protectors provided. Place the meter on the surface, record the reading, lift and repeat.



## SCALES - WORKING WITH YOUR MOISTURE ENCOUNTER ME5

### SCALE 1: WOOD - TIMBER (%MC)

- a. When testing wood & Wood Products, select Scale 1 and lightly press the rubber electrodes directly to the surface. Read the moisture % from the top line of the analog dial where calibration is marked from 5% to 30%. If readings are in the high range (red) and if the audio is turned on, it will sound when readings go above 18%.
- b. **If possible, always take readings with the length of the instrument parallel to the direction of the wood grain.**
- c. Avoid taking readings on wood from the top of a stack stored outside as these may be affected by surface moisture from recent rain.
- d. Calibration tests were carried out by Forbairt, the Irish Institute for Industrial Research and Standards, and are based on Scots Pine, which has a published specific gravity (SG) of 0.40. For wood having an SG other than 0.40 see [“Notes on Specific Gravity” on page 15](#) and [“How to use the Wood SG Adjustment Tables” on page 16](#).

### SCALE 2: SHALLOW DEPTH (%MC FOR WOOD OR COMPARATIVE WME)

The Shallow Depth scale is calibrated to read %MC in wood and comparative WME in non-wood materials. When using both shallow and regular scales the user can get an analysis of moisture conditions up to a depth of APPROX 10mm (0.4 inches) as well as moisture conditions up to a depth of 30mm (1 1/4 inches). Shallow depth scale used on wood will give a %MC at SG 0.40, as Scale 1 does for wood.

When testing non-wood materials, the readings are not % moisture content measurements, but are comparative and can either be taken from the 5 - 30 scale and considered as similar to a Wood Moisture Equivalent WME comparative reading, or from the 0 - 100 REL comparative scale. While the Shallow Depth scale eliminates the influence of any substrate beyond 10mm (0.4 inches), the regular depth does not eliminate the surface coating. The regular depth Scales 3,4 & 5 gives readings from the surface to a depth of up to 30mm (1 1/4 inches).

This dual-depth feature gives the user more versatility and allows for a better understanding of moisture conditions at different depths and ‘within’ / ‘within and behind’ a wide variety of materials.

### SCALE 3: DRYWALL (COMPARATIVE)

Scale 3 has a high sensitivity and deep non-destructive penetrating field. The Moisture Encounter ME5 can identify excess moisture within and behind drywall. As calibration is not practical on this type of construction, readings should be taken from the comparative bottom line of the meter dial (0 to 100).

Scale 2 Shallow Depth can be utilised for Drywall if readings are required whilst reducing the influence of the substrate materials.

**SCALE 3: ROOFING (COMPARATIVE) ●●●**

Scale 3 has high sensitivity and deep non-destructive penetrating field. This scale allows the user to detect the presence of moisture in built-up roofing systems covered with multi-ply roofing felt, PVC, modified bitumen (torch-on) or other non-conductive membranes. As calibration is not practical on this type of construction, readings should be taken from the comparative bottom line of the meter dial (0-100).

**SCALE 4: PLASTER (COMPARATIVE) ●●**

Scale 4 has a medium sensitivity and a deep non-destructive penetrating field and can be used to detect the presence of moisture in plastered walls and ceilings. The moisture profile of the surface can be determined by taking readings across the entire surface. Place and press the meter lightly on the surface, record and repeat. As calibration is not practical on this type of construction, readings should be taken from the comparative bottom line of the meter dial (0-100). The shallow depth scale can be utilised for plaster if readings are required whilst reducing the influence of the substrate materials.

**Note - Acceptably Dry Plaster**

The Moisture Encounter 5 will give low readings when the plaster is acceptably dry. Due to the hygroscopic nature of this material, moisture values are affected by ambient humidity and thus can vary according to the climate conditions. We recommend checking what is 'acceptably dry' in your area and use the instrument to compare these with readings that are 'acceptable' or 'unacceptable'.

**SCALE 4: TILE (COMPARATIVE) ●●**

Due to the medium sensitivity and deep non-destructive penetrating field, this scale should be used when detecting the presence of moisture both within and behind the ceramic and porcelain tile substrate material. As calibration is not practical on this type of construction, readings should be taken from the comparative bottom line of the meter dial (0-100). The shallow depth scale can be utilised for tile if readings are required only within the tile, whilst reducing the influence of the substrate materials.

**SCALE 5: MASONRY (COMPARATIVE) ●**

Scale 5 has low sensitivity and deep non-destructive penetrating field and can be used when detecting the presence of moisture within more dense materials such as brick, block and concrete. As calibration is not practical on this type of construction, readings should be taken from the comparative bottom line of the meter dial (0-100).

**IMPORTANT****Concrete Moisture Measurement:**

**The Moisture Encounter 5 is not calibrated for concrete.** The Tramex Concrete Moisture Encounter CME5 or CMEX5 are specifically designed for concrete flooring and recommended where quantitative measurements are required. However, a useful comparative indication of the moisture conditions of the concrete or subfloor can be obtained with the ME5 set on the Masonry Scale 5.

**Acceptably Dry Brick, Block:**

The Moisture Encounter ME5 will give low readings when the brick, block is acceptably dry. Due to the hygroscopic nature of this material, moisture values are affected by ambient humidity and thus can vary according to the climate conditions. We recommend checking what is 'acceptably dry' in your area and use the instrument to compare these with readings that are 'acceptable' or 'unacceptable'.

Comparative results do not necessarily indicate low, medium or high levels of moisture but indicate the area of the 0-100 comparative scale where the readings lie. It is best practice to find a known acceptably dry area to compare to.

**MATERIALS - WORKING WITH YOUR MOISTURE ENCOUNTER ME5****WOOD AND WOOD PRODUCTS SCALES 1 & 2**  

- a. Acceptable levels of moisture content depend on the climate conditions and we advise you check the levels acceptable in your area. The table below shows the approximate relationship between the ambient relative humidity and equilibrium moisture content in wood. (These figures are approximate values at a temperature of 70° F, and may vary for different species.)

Relative Humidity	Wood MC %
10%	3 to 5
20%	5 to 6
30%	6 to 8
40%	8 to 9
50%	9 to 11
60%	11 to 13
70%	13 to 15
80%	16 to 19
90%	20 to 22
100%	25+

- b. As a rule of thumb and depending on the climatic conditions:
- Exterior wood is generally considered safe for painting when the moisture content is 14% or below.
  - Wood below 10% is generally considered suitable for painting indoors. (Always check coating manufacturers recommendations).
- c. The following moisture content levels are used in the wood industry but as a guide only. Contact industry associations and manufacturers for their specifications.
- Furniture: 5% to 6% in areas of low relative humidity and up to 10% to 11% may be acceptable where the relative humidity is higher.
  - Indoors wood: 6% in low humidity areas. Up to 12% in higher humidity locations.
  - Exterior wood: 10% to 15% depending on local humidity levels.
  - Generally, wood moisture content in excess of 23%-25% is susceptible to rot.
  - Wood moisture content in excess of 18% - 20% may provide an environment for termite and wood boring insects to thrive and multiply. Wood at these high levels can also support mold and biological growth.
  - Wood at 28% moisture content is considered to have reached fiber saturation point.
- d. Avoid taking readings on wood from the top of a stack stored outside as these may be affected by surface moisture from recent rainfall.
- e. When measuring in chemically treated wood, consider the effects chemical treatment may have on readings. It may not be possible to consider the readings as quantitative measurements, but as qualitative comparisons. A known dry sample can be used as the comparative reading to refer to.
- f. **It is advised to not slide the meter across the surface under test. Place the meter on the surface, record the reading, lift and repeat.**

## WOOD FLOORING SCALES 1 & 2

Excess moisture in wood flooring or concrete sub-floors can cause major problems.

If installed with excess moisture, the wood can subsequently shrink leading to job failure.

If a wood floor (solid, laminated or engineered) is installed above wet concrete the wood can absorb moisture emitting from the concrete causing the wood to swell and buckle and even cause structural damage to the building.

When vinyl or other impervious coverings are applied over wet concrete, the result can be failure of the adhesive and blistering of the surface.

Your Moisture Encounter ME5 can be used to measure the moisture content of the wood floor to ensure it meets specification by measuring the %MC using Scale 1 Wood, Timber. As the meter will read up to 30mm (1 3/4 inches) it is advisable to stack the wood to at least that measurement.

The Moisture Encounter ME5 can be used to check, on a qualitative basis, through the floor covering, to identify elevated moisture in the substrate. Scale 2 Shallow Depth will read up to a depth of 10mm (0.4 inches) reducing the influence of the substrate. Scale 1 Wood, Timber will read within the wood floor covering and beyond into the substrate allowing for comparative readings with a known dry area.

When measuring the %MC of hardwood flooring on substrate, use Shallow depth Scale 2, so as to eliminate the influence of the substrate. Take readings from the Wood %MC scale on the meter face. When evaluating the moisture conditions in engineered wood flooring on substrate, use Shallow depth Scale 2, so as to eliminate the influence of the substrate. Take readings from the Comparative scale on the meter face.

### Adhesives

The presence of different species, treatments, adhesives, etc., within products such as plywood, particleboard, OSB (oriented strand board), laminated and engineered woods will affect measurements. It may not be possible to consider the readings as quantitative measurements, but as qualitative comparisons. A known dry sample can be used as the comparative reading to refer to. If in doubt please contact us and, if you wish, we can work with you in developing your own calibration for a specific product.

## CARPET, VINYL & LOW DENSITY FLOOR COVERINGS (COMPARATIVE)

When inspecting installed floor covering for moisture related failures the Moisture Encounter 5 can be used to look within and beneath the floor covering. Testing will be done on a comparative basis.

The Moisture Encounter 5 has scales of varying sensitivity and the scale to use will be determined by the density of the materials (both the floor covering and the substrate). It is advisable to use the shallow depth scale as this is best for taking readings in and just beneath the floor covering.

- Firstly, find a 'known dry area' and choose the meter scale that gives a reading closest to zero on the dry area, but not zero, on the 0-100 REL scale, or closest to 5, but not 5, on the 5-30 %MC scale. This indicates that the meter is detecting and also has the range to detect higher moisture levels in other areas.
- Then, use the meter across the area under test on a comparative basis to locate higher moisture readings, compared to the known dry area baseline reading. These are comparative readings and not quantitative measurements. To get quantitative measurements of a concrete substrate it is necessary to remove the floor covering to get direct access to the clean bare concrete and utilize a Concrete Moisture Encounter to obtain a %MC measurement.

**DRYWALL (COMPARATIVE) SCALE 3** 

The Moisture Encounter 5 can identify excess Moisture within and behind drywall. As calibration is not practical on this type of construction, readings should be taken from the comparative bottom line of the meter dial (0 to 100). Scale 2 Shallow Depth can be utilised for Drywall if readings are required whilst reducing the influence of the substrate materials.

**ROOFING (COMPARATIVE) SCALE 3** 

- a. The presence of moisture in built-up roofing systems covered with multi-ply roofing felt, PCV, modified bitumen (torched-on) or other membranes, can cause blistering and splitting of the roof surface. In addition moisture can cause considerable damage to the contents and fabric of the buildings as well as heat loss through wet insulation. Your ME5 can be used to confirm a new roof has been installed dry.
- b. When the waterproofing membrane develops a leak, the water can travel within the built-up-roof structure and enter the building some distance away. Testing the membrane surface and comparing the dry areas with areas where moisture is present below the surface can assist in tracing such a leak to its source.
- c. As there are many different types and thickness sizes of roofing membranes, it is not possible to give a calibrated percentage measurement. Instead, the comparative scale, marked 0 - 100, is used for checking the difference between wet and dry.
- d. If gravel surfacing is present, this should be removed to ensure your Moisture Encounter ME5 comes into direct contact with the surface of the membrane.
- e. It is recommended that a core be cut to determine the depth and extent of the moisture before carrying out roof repairs. Alternatively, the area can be checked with a Tramex Professional resistance type moisture meter with insulated pins.

**PLASTER (COMPARATIVE) SCALE 4** 

- a. The Moisture Encounter 5 will help identify the different levels of moisture, even if not apparent on the surface. Moisture can often be trapped behind the wall coverings.
- b. Rising damp and moisture migration from leaks and defective, or non-existent, vapor barriers can be identified and profiled and often its source identified.
- c. Water damage following flooding or firefighting can be checked and drying out and dehumidification process can be monitored.

**TILE (COMPARATIVE) SCALE 4** 

The Moisture Encounter 5 Tile scale can be used detect elevated moisture conditions within and behind most types of tile including ceramic and porcelain. Excess moisture trapped behind covering materials such as tiles can cause major problems like decay, delamination and mold growth. The longer these problems go undetected, the worse the problem can get eventually leading to system failure.

## MASONRY (COMPARATIVE) SCALE 5 ●

The Moisture Encounter 5 will detect elevated moisture conditions within bricks, blocks and concrete materials. Always press the electrodes firmly against the surface. The moisture profile of the masonry wall or other can be determined by taking readings across the surface. The Moisture Encounter 5 will read through most paints and wall coverings. It can identify the different levels of moisture even if not apparent on the surface.

### Concrete Moisture Measurement:

**The Moisture Encounter 5 is not calibrated for concrete.** The Tramex Concrete Moisture Encounter CME5 or CMEX5 are specifically designed for concrete flooring and recommended where quantitative measurements are required. **However, a useful comparative indication** of the moisture conditions of the concrete or subfloor can be obtained with the ME5 set on the Masonry Scale 5.

### Acceptably Dry Brick, Block:

The Moisture Encounter ME5 will give low readings when the brick, block is acceptably dry. Due to the hygroscopic nature of this material, moisture values are affected by ambient humidity and thus can vary according to the climate conditions. We recommend checking what is 'acceptably dry' in your area and use the instrument to compare these with readings that are 'acceptable' or 'unacceptable'.

## WORKING WITH YOUR Moisture Encounter ME5 (Readings and SG Tables):

### Notes on Specific Gravity (SG)

The SG of wood varies between species and this has an effect on moisture meter readings. The Moisture Encounter 5 calibration is based on wood having an SG of 0.40. Wood is normally categorised as follows:

Density	SG at 12% MC
Exceptionally Light	0.30 or Less
Light	0.30 to 0.45
Medium	0.45 to 0.65
Heavy	0.65 to 0.90
Exceptionally Heavy	0.90 or More

#### Note

The Moisture Encounter ME5 is calibrated at 0.4 S.G. If you are used to measurements based on 0.5 S.G. calibration, please take note that the adjustments can be made with the chart. 0.40 S.G. is chosen for the calibration of the Shallow Depth scale to allow it to be used on the widest variety of building materials including drywall/plasterboard.

When measuring the %MC of hardwood flooring on substrate, use Shallow depth Scale 2, so as to eliminate the influence of the substrate. Take readings from the Wood %MC scale on the meter face. When evaluating the moisture conditions in engineered wood flooring on substrate, use Shallow depth Scale 2, so as to eliminate the influence of the substrate. Take readings from the Comparative scale on the meter face.



**HOW TO USE THE WOOD SG TABLES**

When testing wood, which does not have an SG of 0.40, the meter reading can be adjusted by referring to the tables shown on pages 33 and 34. For example, if the wood being tested has an SG of 0.50 and the meter reading is 17% (top row of table) then the adjusted moisture content reading can be found where the 0.50 SG row intersects with 17% meter reading column. For this example the adjusted moisture content would be 15%.

Meter Reading 0.40	5	6	7	8	9	10	11	12	13	14	15	16	17
Specific Gravity	ADJUSTED/CORRECTED MOISTURE CONTENT												
0.3	7	8	9	11	11	12	13	14	15	17	18	19	20
0.32	7	8	9	11	11	12	13	14	15	16	18	19	19
0.34	6	7	8	10	10	11	12	13	14	15	17	18	19
0.36	6	7	8	10	10	11	12	13	14	15	16	17	18
0.38	6	7	8	10	10	10	11	12	14	14	16	17	18
0.4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.42	5	6	7	8	9	9	10	11	13	13	15	16	17
0.44	5	6	7	8	8	9	10	11	12	13	14	15	16
0.46	4	5	6	7	8	9	10	11	12	13	14	15	16
0.48	4	5	6	7	7	8	9	10	11	12	13	15	15
0.5	4	5	6	7	7	8	9	10	11	12	13	14	15

WOOD SPECIFIC GRAVITY ADJUSTMENT TABLE (5 to 17%)

Meter Reading 0.40	5	6	7	8	9	10	11	12	13	14	15	16	17
Specific Gravity	ADJUSTED/CORRECTED MOISTURE CONTENT												
0.3	7	8	9	11	11	12	13	14	15	17	18	19	20
0.32	7	8	9	11	11	12	13	14	15	16	18	19	19
0.34	6	7	8	10	10	11	12	13	14	15	17	18	19
0.36	6	7	8	10	10	11	12	13	14	15	16	17	18
0.38	6	7	8	10	10	10	11	12	14	14	16	17	18
0.4	5	6	7	8	9	10	11	12	13	14	15	16	17
0.42	5	6	7	8	9	9	10	11	13	13	15	16	17
0.44	5	6	7	8	8	9	10	11	12	13	14	15	16
0.46	4	5	6	7	8	9	10	11	12	13	14	15	16
0.48	4	5	6	7	7	8	9	10	11	12	13	15	15
0.5	4	5	6	7	7	8	9	10	11	12	13	14	15
0.52	4	5	6	7	7	7	9	9	10	11	12	13	14
0.54	3	4	6	6	6	7	8	9	10	11	12	13	14
0.56	3	4	5	6	6	6	8	9	10	11	11	13	14
0.58	3	4	5	6	6	6	7	8	9	10	11	12	13
0.6	3	4	5	6	6	6	7	8	9	10	11	12	13
0.62	3	4	5	6	6	6	7	8	9	10	11	12	13
0.64	3	3	5	6	5	6	7	8	9	10	11	12	13
0.66	3	3	4	5	5	6	7	8	9	9	10	11	12
0.68	3	3	4	5	5	5	6	7	8	9	10	11	12
0.7	2	3	4	5	5	5	6	7	8	9	9	10	11
0.72	2	2	4	5	5	5	6	7	8	9	9	10	11
0.74	2	2	4	5	5	5	6	7	8	9	9	10	11
0.76	2	2	3	4	4	4	5	6	8	9	9	9	10
0.78	2	2	3	4	4	4	5	6	8	9	9	9	10
0.8	2	2	3	4	4	4	5	6	7	8	8	9	10
0.82	2	2	3	4	4	4	5	6	7	8	8	8	9
0.84	2	2	3	4	4	4	5	6	7	8	8	8	9
0.86	2	2	3	4	4	4	5	6	7	8	8	8	9
0.88	2	2	3	4	4	4	5	6	7	8	8	8	9
0.9	2	2	3	3	3	3	4	5	7	7	7	7	8

**WOOD SPECIFIC GRAVITY ADJUSTMENT TABLE (18 to 30%)**

Meter Reading 0.40	18	19	20	21	22	23	24	25	26	27	28	29	30
Specific Gravity	ADJUSTED/CORRECTED MOISTURE CONTENT												
0.3	20	22	23	24	25	25	27	28	30	31	32	33	34
0.32	20	21	22	24	24	25	26	27	29	30	31	32	33
0.34	19	21	21	23	23	24	25	27	28	29	30	31	32
0.36	19	20	21	22	23	24	25	26	27	28	29	30	31
0.38	18	20	20	21	22	23	25	26	27	27	29	30	31
0.4	18	19	20	21	22	23	24	25	26	27	28	29	30
0.42	17	18	19	20	22	22	23	24	25	26	28	29	29
0.44	17	17	18	19	21	21	22	23	25	25	27	28	28
0.46	16	17	18	19	20	21	20	22	24	25	26	27	27
0.48	15	16	17	18	19	20	20	21	24	24	25	26	26
0.5	15	16	17	18	19	20	20	21	23	24	25	26	26
0.52	14	15	16	17	18	19	19	20	22	23	24	25	25
0.54	14	15	15	16	17	18	18	19	21	23	23	24	24
0.56	13	14	14	15	16	17	17	18	19	21	22	23	23
0.58	13	14	14	15	15	16	16	17	18	19	21	22	23
0.6	12	13	13	14	15	16	15	16	17	18	20	21	22
0.62	12	13	13	14	15	16	15	16	16	18	19	20	22
0.64	12	12	12	13	14	15	14	15	16	17	18	19	22
0.66	11	12	12	13	14	15	14	15	15	16	17	18	20
0.68	11	11	11	12	13	14	13	14	14	16	17	18	19
0.7	11	11	11	12	13	13	13	13	14	15	16	17	18
0.72	11	11	11	12	13	13	13	13	14	15	16	17	18
0.74	10	11	11	11	12	12	12	12	13	14	15	16	18
0.76	10	10	10	11	12	12	12	12	13	14	15	16	17
0.78	10	10	10	11	12	12	12	12	13	14	15	15	16
0.8	10	10	10	10	11	12	11	12	13	14	14	15	16
0.82	9	9	9	10	11	11	10	11	12	13	14	14	15
0.84	9	9	9	10	11	11	10	11	12	13	14	14	14
0.86	9	9	9	10	11	11	10	10	11	13	13	14	14
0.88	9	9	9	10	11	11	10	10	11	12	13	14	14
0.9	9	9	9	9	9	10	10	10	11	12	13	13	14

## RELATIVE HUMIDITY AND MOISTURE CONTENT

The table below shows the approximate relationship between relative humidity and equilibrium moisture content of some woods. (These figures are approximate values at a temperature of 70 °F, and may vary for different species.)

<b>Relative Humidity</b>	<b>Wood MC %</b>
<b>10%</b>	<b>3 to 5</b>
<b>20%</b>	<b>5 to 6</b>
<b>30%</b>	<b>6 to 8</b>
<b>40%</b>	<b>8 to 9</b>
<b>50%</b>	<b>9 to 11</b>
<b>60%</b>	<b>11 to 13</b>
<b>70%</b>	<b>13 to 15</b>
<b>80%</b>	<b>16 to 19</b>
<b>90%</b>	<b>20 to 22</b>
<b>100%</b>	<b>25+</b>

---

## LIMITATIONS

The Moisture Encounter ME5 will not detect or measure moisture through any electrically conductive materials including metal sheeting or cladding, black EPDM roofing, butyl roofing, aluminum siding or wet surfaces.

## CALIBRATION

For regular on-site assessment of your Moisture Encounter ME5 in moisture measurement mode, a calibration check box is available from the suppliers of your Moisture Encounter ME5 (Product Code: CALBOXME5). The calibration check box allows for daily on-site calibration checks. Should it be found that readings are outside the set tolerances, it is recommended that the Moisture Encounter ME5 be returned for re-calibration. Click [here](#) for a Calibration Request. Calibration adjustments should not be carried out by anyone other than Tramex or their authorised service provider who will issue a calibration certificate on completion.

Requirements for quality management and validation procedures, such as ISO 9001, have increased the need for regulation and verification of measuring and test instruments. It is therefore recommended that calibration of the Moisture Encounter ME5 should be checked and certified in accordance with the standards and/or protocols laid down by your industry (usually on an annual basis) by an authorized test provider. The name of your nearest test provider and estimate of cost is available on request.

## WARRANTY

Tramex warrants that this instrument will be free from defects and faulty workmanship for a period of one year from date of first purchase. If a fault develops during the warranty period, Tramex will, at its absolute discretion, either repair the defective product without charge for the parts and labour, or will provide a replacement in exchange for the defective product returned to Tramex Ltd.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. In no event shall Tramex, its agents or distributors be liable to the customer or any other person, company or organisation for any special, indirect, or consequential loss or damage of any type whatsoever (including, without limitation, loss of business, revenue, profits, data, savings or goodwill), whether occasioned by the act, breach, omission, default, or negligence of Tramex Ltd., whether or not foreseeable, arising howsoever out of or in connection with the sale of this product including arising out of breach of contract, tort, misrepresentation or arising from statute or indemnity. Without prejudice to the above, all other warranties, representations and conditions whether made orally or implied by circumstances, custom, contract, equity, statute or common law are hereby excluded, including all terms implied by Section 13, 14 and 15 of the Sale of Goods Act 1893, and Sale of Goods and Supply of Services Act 1980.

## **WARRANTY CLAIMS**

A defective product should be returned shipping prepaid, with full description of defect to your supplier or to Tramex Ltd.

## **PRODUCT DEVELOPMENT**

It is the policy of Tramex to continually improve and update all its products. We therefore reserve the right to alter the specification or design of this instrument without prior notice.

## **SAFETY**

This User Guide does not purport to address the safety concerns, if any, associated with this instrument or its use. It is the responsibility of the user of this instrument to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

www.tramexmeters.com

FIND US ON:



---

Tramex Ltd.  
Unit F, Glencormack Business Park,  
Kilmacanogue,  
County Wicklow, Ireland.

Email: [sales@tramexmeters.com](mailto:sales@tramexmeters.com)

USA (toll free) & Canada:  
Tel: 1800-234-5849

EU & Rest Of World:  
Tel: +353 1 681 4450