MOISTURE METER FOR CONCRETE



Instant and non-destructive tests per ASTM F2659 with the Tramex CME4, a non-invasive handheld electronic instrument used for testing moisture conditions in concrete slabs and giving comparative readings in other cementitious floor screeds. Precise and easy to use, the CME4 allows the user to make multiple tests over a large area in the shortest possible time.

Screeds and concrete floors must be dry before a floor covering is installed.

Don't take risks with excess moisture!

Moisture test before you install a floor covering.



Product order code: CME4

FEATURES

- Clear easy-to-read analog dial.
- No need to probe, drill or mechanically damage the surface.
- Instant and precise readings to a depth of approx. ³/₄" into the slab.
- Non-destructive in operation.
- Hold function "freezes" meter reading when inspecting areas where the meter face is not visible, and for easy recording of data.
- Reproducible results.
- Spring-loaded contact pins compensate for uneven concrete and boost signal penetration.



CME4 Calibration check plate CALCRH

CME4-US 09/18 REV.1.1





The CME4 Concrete Encounter detects and evaluates the moisture conditions within the slab or screed by non-destructively measuring the electrical impedance. A low frequency electronic signal is transmitted into the material under test via the electrodes in the base of the instrument. The strength of this signal varies in proportion to the amount of moisture present in the material. The CME4 determines the strength of the current and converts this to a moisture content value for concrete slabs and a comparative value for other cementitious floor screeds, displayed on a large clear analog dial.

OPERATING PROCEDURE

To carry out tests simply brush any dust from a smooth area of concrete and also from the electrodes, switch on the Concrete Encounter CME4 and place it firmly onto the surface, fully compressing the spring-loaded, signal-enhancing contacts on the base. Read the moisture content from the clear analog dial.

The CME4 is calibrated to give percentage moisture content readings on clean, bare dust free concrete floor slabs, with a depth of penetration of approx. ³/₄". Readings taken on concrete slabs through paint, coatings, adhesives or other materials on the surface should be regarded as qualitative or comparative and not quantitative.

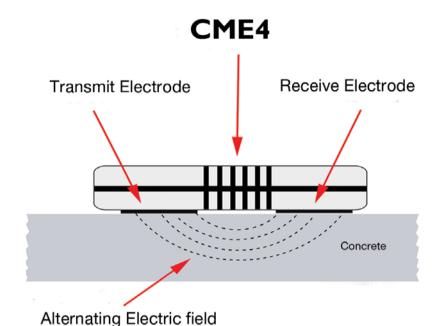
SPECIFICATIONS

Size: 6" x 3.5" x 1.5" (150mm x 85mm x 38mm)
Weight: 9.84oz (279g)
Construction: ABS Body
Power: 9 volt PP3 Battery (included)
Display: Analog
Depth of penetration: approx. 3/4" (20 mm)

MEASURING RANGE

 $\begin{tabular}{lll} Moisture Content for Concrete & 0 to 6\% \\ Comparative for Gypsum floor screed & 0 to 10 \\ Reference scale & 0 to 100 \\ \end{tabular}$

HOW IT WORKS





CME PERT II



COMPLETE MOISTURE AND HUMIDITY METER FOR FLOORING

Instant and non-destructive moisture content tests per ASTM F2659 with the CMEX II, a digital version of the CME4 handheld electronic moisture meter, designed for the instant and precise measurement of moisture content in concrete slabs and giving comparative readings in other cementitious floor screeds. Incorporating plug-in ports for the optional Hygro-i2 $^{\circ}$ relative humidity probe and heavy-duty pin-type wood probes, this meter transforms into the ideal all-in-one instrument for the flooring professional.

MEETING THE STANDARDS

For evaluating the moisture conditions of concrete and other slabs and screeds per ASTM F2659 (Nondestructive method) and relative humidity measurement to ASTM F2170 (In situ method) and British Standard 8201, 8203 (Hood Method) with optional Hygro-i2° probe.

CMEX2-US 01/16 REV.1.1



FEATURES

- Measures up to 6.9% moisture content in concrete.
- Large clear backlit digital display.
- Hold function "freezes" meter reading when inspecting areas where the meter face is not visible, and for easy recording of data.
- Multi-language options.
- 7% to 40% Moisture Content measurement in Wood using Pin-type probe attachments. (optional)
- Attaches to a reusable relative humidity Hygro-i2 probe for in situ or hood method testing of concrete per ASTM F2170 and BS 8201, 8203. (optional)
- Ambient conditions of relative humidity, temperature, dew point and grains per pound, all shown simultaneously on one clear display. (using optional Hygro-i2 ° probe)









The CMEX II detects and evaluates the moisture conditions within the slab or screed by non-destructively measuring the electrical impedance. A low frequency electronic signal is transmitted into the material under test via the electrodes in the base of the instrument. The strength of this signal varies in proportion to the amount of moisture present in the material. The CMEX II determines the strength of the current and converts this to a moisture content value for concrete slabs and a comparative value for other cementitious floor screeds, displayed on a large clear digital dial.

HYGROMETER MODE

When the optional Tramex Hygro-i2° relative humidity probe is plugged into the CMEX II, the instrument automatically changes to Hygrometer Mode, allowing for in situ relative humidity (RH) testing of floor slabs per ASTM F2170 and BS 8201, 8203 Hood Method, as well as ambient conditions of temperature, relative humidity, dew point and mixing ratios. This resilient probe is reusable and can be checked regularly for calibration.

WOOD PIN-TYPE PROBE MODE

In Pin-probe mode by plugging in the optional handheld or hammer probe the CMEX II becomes a resistance type pin meter for determining the moisture content of wood and wood based products. The CMEX II gives moisture content readings from 7% to 40% in wood. A species adjustment table and a temperature adjustment chart are supplied for precise readings in woods of varying densities and readings taken in various temperatures.

SPECIFICATIONS (meter only)

Size: 6" x 3.5" x 1.5" (150mm x 85mm x 38mm)

Weight: 11.25oz (319g)

Construction: ABS Body

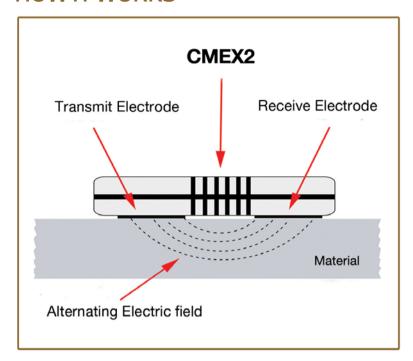
Power: 9 volt PP3 Battery (included)

Display: Digital / Backlit

Depth of penetration in concrete: approx. 3/4" (20mm)

MEASURING RANGE

HOW IT WORKS



The CMEX II is included in the following Tramex kits:

- Concrete Inspection Kits
- Flooring Inspection Kits
- Roof Inspection Kits
- Water Damage Restoration Kits
- Indoor Air Quality Kits



DEC SCANNER



MOISTURE DETECTOR FOR ROOFING

The Tramex Dec Scanner is a mobile non-destructive impedance scanner designed for the instant surveying of moisture conditions in roofing and waterproofing systems per ASTM D7954.

Why should testing be done?

Excess moisture in a roofing system can affect its performance, reducing thermal resistance values and energy efficiency, raising energy costs and eventually causing structural damage and system failure.

FEATURES

- $\bullet \quad \hbox{Non-destructive impedance moisture scanner}.$
- Three ranges of sensitivity enabling the inspection of a variety of roof membranes and insulation thicknesses.
- Ergonomic, easy-reach and easy to operate control panel.
- Leak tracing, problem sourcing and an instantaneous and clear indication of roof condition.
- Fast and precise readings over large roof areas in a short time frame.
- Work in normal daylight hours.
- Faster and more user friendly than nuclear meters.
- Easy and safe to use with no regulatory restrictions or operating license required.
- Dependable solid state circuitry and rugged molded body for long-term reliability.
- Battery powered 2 x 9 Volt PP3.

Product order code: DSAL







The Dec Scanner detects and evaluates the moisture conditions within roofing systems by non-destructively measuring the electrical impedance. A low frequency electronic signal is generated, transmitted into the material under test via one of the two electrodes incorporated in the rubber electrode mat, and received by the second electrode. The strength of this signal varies in proportion to the amount of moisture in the material under test. The Dec Scanner determines the strength of the current and converts this to a comparative moisture content value. By moving the Dec Scanner across a roof surface in a regular pattern, a continuous reading is obtained, and areas that contain moisture can be readily identified.

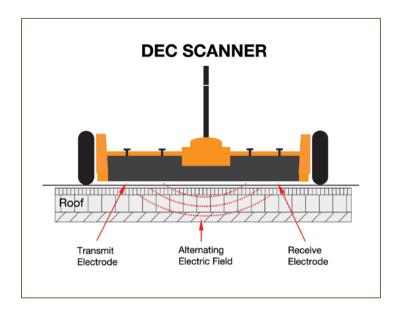
OPERATING PROCEDURE

Moisture detection testing can be done at the time of installation for warranty auditing and quality control, as part of an ongoing maintenance program, or prior to re-roofing or repair of damaged roofs. The Dec Scanner is a durable but lightweight instrument that is easily transported to the roof surface. Having determined a known acceptably dry area, one of three sensitivity ranges is selected, and the Dec Scanner is ready to use. Without causing any damage to the roof surface, the Dec Scanner is moved over the tested area. The Dec Scanner gives continuous moisture condition readings, from which a moisture map of the surface can be drawn up, and leaks traced to their source.

SPECIFICATIONS

 $30''W \times 15^{3/4}''D \times 6^{1/4}''H (762 \text{ mm} \times 400 \text{ mm} \times 158 \text{ mm})$ Size: Scanning area: 24"W x 15.5"D (609 mm x 394mm) 38"W x 20"D x 12"H (940mm x 508 mm x 305mm) Carry case: Weight: Dec Scanner 24.6 lbs (9.95 Kg) Weight: Carry Case 21.9 lbs (9.9 Kg) Total Weight: Dec Scanner in Carry Case 46.5 lbs (21.1 Kg) Outer packaging carton weight: 4.4 lbs (2 Kg) 51 lbs (23.1Kg) Total shipping weight: Dimensional shipping weight: 66 lbs (30 Kg) Display: Analog Measuring Range: 0 to 100 Comparative Max. depth of penetration: 6" (152 mm) 2 x 9 Volt PP3 Batteries (included) Power Supply: Some EPDM, Butyl rubber roofing Limitations: and other conductive roofing.

HOW IT WORKS



RANGE SELECTION

The Dec Scanner has an integrated and adjustable calibration ability allowing for precise comparative readings. There are 3 Ranges, and they should be selected as best suits the surface under test, for example:

- Range 1 Most suitable for single-ply and thin roof coverings such as PVC, Hypalon and other smooth surfaces where insulation is wet and moisture is close to the surface.
- Range 2 Most suitable for multi-ply built-up and modified systems, mineral surfaced felts, and other smooth or gravel surfaces where insulation is less wet and moisture is below the surface.
- Range 3 Most suitable for thicker roof coverings such as mastic
 asphalt, thick gravel and stone surfaced roofing.







MOISTURE METER FOR BUILDING MATERIALS



The Tramex MEP is a non-invasive complete building inspection tool which has applications for numerous industries. It has many unique features that makes non-destructive moisture measurement and evaluation fast, precise and versatile.

MATERIAL

- Drywall
- Wood
- Plaster
- Brick
- Tiles
- Resilient flooring
- Laminates
- Roofing



FEATURES

- Wide range of readings from 5% to 30% on Wood Scale and 0 to 100 on comparative scale for all other materials.
- Deep signal penetration, up to 1½" (30mm) in wood and drywall, detects elevated moisture through most covering materials without having to damage or puncture the materials being tested.
- Three ranges of sensitivity: Wood, Timber / Drywall, Roofing / Plaster, Brick – making it ideal for testing most materials found in the building envelope.
- Detects moisture through paint, wall paper, drywall, ceramic tiles, floor coverings, wood, ceiling tiles, roofing membranes and asphalt composition shingles.
- High Moisture Audio Warning Tone which can be enabled or disabled.
- Large clear easy to read analog display giving meaningful readings.
- Hold Function which enables the user to "freeze" the reading, useful when taking readings where the meter face may not be visible.

MEP-US 10/18 REV.1.1







The MEP Moisture Encounter Plus detects and evaluates moisture conditions within various building materials by non-destructively measuring the electrical impedance. A low frequency electronic signal is transmitted into the material via the electrodes in the base of the instrument. The strength of this signal varies in proportion to the amount of moisture in the material under test. The MEP determines the strength of the current and converts this to a moisture content value, displaying it on a large clear analog dial.

USES

Used and trusted by generations of professionals worldwide for the purpose of:

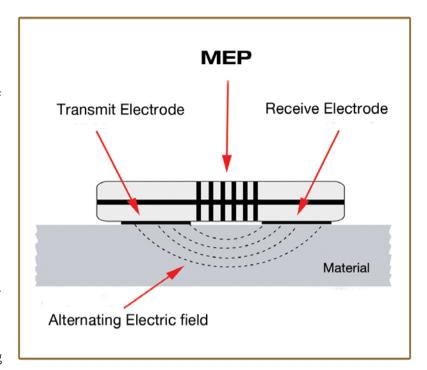
- Locating moisture related problems within and behind a variety of building materials in the building envelope.
- Mapping the extent of moisture damage caused to buildings.
- Monitoring progressive drying conditions in the drying process of building materials and surfaces.

SPECIFICATIONS

MEASURING RANGE

 $\begin{tabular}{lll} Wood Moisture Content: & 5 to 30\% \\ Reference scale for building materials: & 0 to 100 \end{tabular}$

HOW IT WORKS













$MRH \parallel \parallel$



MOISTURE AND HUMIDITY METER

3 MODES OF OPERATION:

Non-destructive testing of moisture content in wood, tracing moisture in wood based products and many other building materials such as bricks, plaster, ceramic tiles and laminates.

Pin-probe plug-in attachment (optional) for moisture content in wood and an indication of moisture conditions in wood based products.

Hygro-i2° probe attachment (optional) for relative humidity and temperature measurement. The Moisture and Relative Humidity MRH III is a hand-held digital moisture meter calibrated for most building materials. It also incorporates optional plug-in heavy-duty pin-type wood probes and Hygro-i2° probes for measurement of relative humidity and ambient conditions and allowing for testing of concrete per ASTM F2170 or BS 8201 (with optional sleeves or hood). Suitable for many industries including Flooring, Water Damage Restoration, Indoor Air Quality, Home Inspection and Pest Control.



FEATURES

- Deep signal, non-destructive penetration up to 1¹/₄" in wood and drywall in non-destructive mode.
- Detects moisture through paint, wall coverings, drywall, ceramic tiles, floor coverings, wood, roof coverings and most building materials.
- Hold function "freezes" meter reading when inspecting areas where the meter face is not visible.
- Audio signal sounds when meter indicates high readings.
- Large clear backlit digital display giving meaningful readings.
- Accuracy in very low moisture content readings and up to 55% moisture content readings in wood in non-invasive mode.
- Attachable pin-type wood probe for invasive testing (optional).
- Adjustment of specific gravity for wood species correction.
- Attaches to a reusable relative humidity Hygro-i2* probe for in situ or hood testing of concrete per ASTM F2170. (optional)
- Attachable Hygro-i2* Relative Humidity probe for relative humidity, temperature, dew point and grains per pound readings all shown on one clear display (optional).



The MRH III operates on the principal of non-destructive impedance measurement. Co-planar electrodes are fitted on the base of the instrument from which low frequency signals are transmitted into the material under test, measuring the change in impedance caused by the presence of moisture. This reading is translated by the instrument into a moisture content reading.

HYGROMETER MODE

When the Tramex Hygro-i2° relative humidity probe is plugged into the MRH III, it automatically changes to Hygrometer Mode. The Tramex Hygro-i2° provides the ideal solution for measurements of ambient relative humidity, temperature and dew point conditions within the building structure and in structural materials such as concrete flooring, walls etc.

SPECIFICATIONS (meter only)

Size: 6" x 3.5" x 1.5" (150mm x 85mm x 38mm)

Weight: 8.47oz (240g)

Construction: ABS Body

Power: 9 volt PP3 Battery (included)

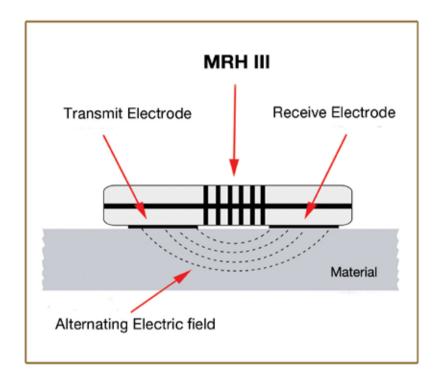
Display: Digital / Backlit

Depth of penetration: up to 11/4"(30mm)(In wood, drywall)

MEASURING RANGE

Reference scale for building materials 0 to 100
Relative Humidity (with optional Hygro-i2 * probe) 0 to 99%
Wood Non-invasive Mode 5 to 55%MC (at SG of 0.3)
Wood Invasive Mode (with optional wood pin probes) 7 to 40%MC

HOW IT WORKS









PROFESSIONAL



PTM 2.0

MATERIAL:

- Wood.
- Drywall.
- WME (Ref) Wood
 Moisture Equivalent
 comparative readings for
 Various other building
 materials.

The Professional PTM 2.0 is a hand-held, digital, pin-type resistance moisture meter designed to take precise measurements of moisture content in wood, relative drywall readings and comparative WME (Wood Moisture Equivalent) readings in wood by-products and other building products. The Professional PTM 2.0 has built-in standard calibrations, specific calibration for over 500 wood species and adjustable temperature correction.



Product order code: PTM2

FEATURES

- Built-in calibration for 500+ wood species or standard calibration selection.
- Wide moisture content range: 6 46% and digital readout to 0.1% accuracy
- Adjustable temperature correction
- Built-in calibrations checks for confirmed accuracy
- Reading 'Hold' facility
- Save up to 100 readings for max, min, average and standard deviation statistics
- Colour LCD screen with brightness adjustment for low-light operation
- Heavy-duty, light-weight aluminium construction
- Built-in pins and optional external handheld and hammer probes available

PTM2-US 10/18 REV.1.1







THE IMPORTANCE OF DETERMINING MOISTURE CONTENT OF WOOD

When wood and wood by-products are installed at the correct moisture content for the environment in which they will be used, the risk of swelling or shrinkage is minimized. If it is installed too wet and dries in service the result will be shrinkage and distortion. If it is installed too dry it could gain moisture, which could result in swelling.

Using a good quality moisture meter is the most practical way of ensuring the wood is at the correct moisture level for its intended use. Knowing the actual moisture level also enables efficient processing to be carried out, such as milling, machining, gluing, laminating, spraying and hand painting. The Professional PTM 2.0 fulfills all these requirements.

SPECIFICATIONS

Size: $7\frac{1}{4}$ " x 3" x $1\frac{1}{4}$ " (18.5mm x 7.5mm x 2.8mm) Weight: 9.8oz (278g) Construction: Aluminium

Power: 4 x AAA Batteries (included)
Display: Digital / Backlit
Preset wood species: 500+

HOW IT WORKS

The Professional PTM 2.0 moisture meter works on the principle of DC resistance. When the electrode pins are pressed or driven into the wood, the electrical resistance between the electrodes is measured. If the wood is dry, the resistance is high. If moisture is present in the wood the electrical resistance between the pins changes. The higher the moisture content the greater the reduction in resistance. The level of resistance is accurately measured by the instrument, which translates it into a moisture value. This is a percentage of dry weight moisture content for wood; comparative drywall reading values; and a WME (Wood Moisture Equivalent reference) value for many other building materials.

MEASURING RANGE

Wood moisture content: 6 to 46 % WME (Ref) reference scale for building materials: 0 to 100 Drywall reference scale: 0 to 8.5









The Tramex RWS is a multi-mode non-invasive impedance moisture scanner designed for the instant, precise and non-destructive evaluation of moisture conditions and leak tracing in the roofing and walls systems of the building envelope. The RWS is used to perform ASTM D7954.

MATERIAL

ROOF

- Non-Conductive
 Single Ply Roofing
- Built-Up Roofing
- Modified & Spray Foam Roofing Systems

WALL

 Exterior Insulation and Finishing Systems (EIFS)

The RWS incorporates two of the best known Tramex moisture scanners, the Leak Seeker for Roofing and the Wet Wall Detector for EIFS to give all the benefits and features of both of these time proven instruments.



FEATURES

- For non-destructive moisture evaluation of roofs, EIFS, foam insulation systems & other building envelope applications.
- To evaluate the extent of the moisture problem and help trace and pin-point its source.
- Multi-mode functions allowing for depth penetration and sensitivity selection.
- Fast and easy to operate giving instant clear readings.
- "Hold" function facilitates ease of recording readings.
- Lightweight, handheld and battery operated.
- Inexpensive to purchase and operate compared to other non-destructive testing methods.

The Problems of Excess Moisture in the Building

By visual inspection, locating excess moisture and decay in or behind EIFS or Roofing Systems can be extremely difficult as normal evidence of this moisture and decay may not be visible on either side of the wall or roof. Excess moisture can be hidden and trapped in the substrate and within the thickness of the wall or roof construction. If these conditions are allowed to continue the moisture will increase, eventually leading to rot and decay and possible failure of the system and the structure. Also wet insulation loses its thermal value, resulting in unnecessary heat loss or gain and thermal movement in the structure. Early detection of wet areas and corrective remedial action makes good economic sense.

The Roof & Wall Scanner detects and evaluates the moisture conditions within roofing and wall systems by non-destructively measuring the electrical impedance. A low frequency electronic signal is transmitted into the material under test via the electrodes in the base of the instrument. The strength of this signal varies in proportion to the amount of moisture in the material under test. The Roof & Wall Scanner determines the strength of the current and converts this to a comparative moisture content value, displaying it on a large clear analog dial.

OPERATING PROCEDURE

Moisture detection testing can be done at the time of installation, as part of an ongoing maintenance program, or prior to reparation of damaged roofing and wall systems. The RWS is a handheld, hardwearing instrument with dual operating modes for roofing and EIFS/Foam insulation systems, each with two ranges of signal penetration. Having calibrated the RWS on a known acceptably dry area, the RWS gives instant readings for the moisture survey.

SPECIFICATIONS

 Size:
 4.9" x 10.8" x 2.9" (125mm x 275mm x 75mm)

 Weight:
 1.88lbs (853g)

 Construction:
 ABS Body

 Power:
 9 volt PP3 Battery (included)

 Display:
 Analog

 Depth of penetration:
 4" (100mm)

Sensitivity: Four Ranges: Roofing Mode with high and low sensitivity. EIFS / Foam Roof Insulation Mode with high and low sensitivity.

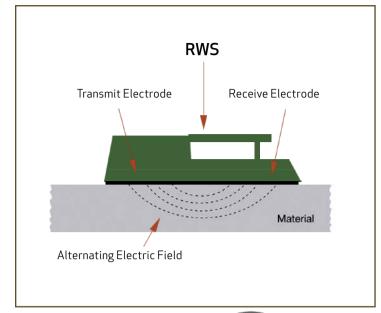
Accessories: Leather carry case. Telescopic handle for use on roofs only.

Limitations:

Some EPDM, Butyl rubber roofing and other conductive roofing. Hard Coat Stucco, wire lath or wire mesh reinforced finishes.



HOW IT WORKS





Roof Inspection Kit

The RWS is available in the Roof Inspection Kit for moisture detection and evaluation of roofing and waterproofing systems. This kit contains: the RWS (and aluminum telescopic handle for roof use), the CMEX II for moisture content readings in concrete, a Hygro-i2* probe for ambient relative humidity readings, wood Pin-probes and hole-punch, and an infrared surface thermometer. Comes in a rugged foam-lined carry case.

Product order code: RIK5.1



EIFS Inspection Kit

The RWS (a combination of the Leak Seeker and Wet Wall Detector) is available in the Exterior Insulation and Finishing Systems Inspection Kit for moisture detection and evaluation of walls and EIFS. This kit contains: the RWS (and aluminum telescopic handle for roof use), the MRH III for moisture condition readings in a variety of wall materials, a Hygro-i2* probe for ambient relative humidity readings, wood Pin-probes and hole-punch, and an infrared surface thermometer. Comes in a rugged foam-lined carry case.

Product order code: EIK5.1









SKIPPER plus moisture meter for boats



The Skipper Plus non-destructive moisture meter provides a complete, safe method for detecting excess moisture in GRP and wooden boats. A pocket-sized meter, the Skipper is designed to locate moisture in boat hulls and fittings.

OSMOSIS IN GRP

Osmosis, also known as Gelcoat Blistering, is found in GRP hulls when moisture soaks into the hull surface, collects between the glassfibre and plastic laminate, resulting in blistering of the gelcoat. Usually found on or below the waterline, Osmosis dramatically reduces the structural strength of the hull and the value of a boat.



FEATURES

- Three ranges for detecting moisture in GRP and hardwood.
- Wide range of readings for wood of 5% to 30% on hardwood scale and 0 to 100 on comparative scale for GRP and other materials.
- Identifies the presence of osmosis in GRP hulls.
- Confirms if wooden boats are dry enough for painting or varnishing.
- Trace deck and bulkhead leaks.
- "Hold" function facilitates ease of recording readings
- Soft rubber electrodes make direct contact without scratching.
- High moisture audio warning tone that can be switched on or off.
- Battery operated (included)







The Skipper Plus operates on the principal of non-destructive impedance measurement. Coplanar electrodes are fitted on the base of the instrument from which low frequency signals are transmitted into the material being tested measuring the change in impedance caused by the presence of moisture. This reading is translated by the instrument into a moisture content reading.

THE SKIPPER PLUS MOISTURE METER IS USED FOR:

- Early detection before blistering appears.
- Identifying the affected area.
- Monitoring hull during de-humidification and repairs.
- Checking stripped or peeled areas for dryness prior to re-coating.

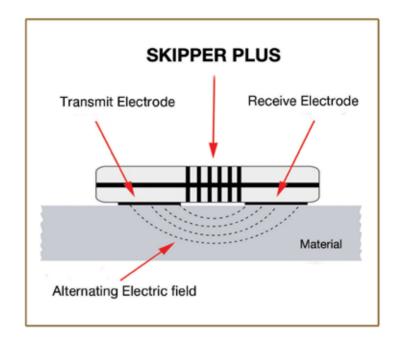
To achieve a lasting finish and strength of wooden boats and boat parts it is essential to ensure that they are well maintained and do not contain excess moisture. Excess moisture can rot and decay the wood itself.

SPECIFICATIONS

MEASURING RANGE

Wood Moisture Content:5 to 30 %Reference scale:0 to 100

HOW IT WORKS



MOISTURE IN WOOD

Moisture can cause peeling and blistering of applied finishes and treatments, newly applied finishes can fail prematurely if the wood it is applied to is not sufficiently dry. Hidden or trapped moisture can lead to mold and biological growth. The Skipper Plus can be moved across the surface of the boat to moisture survey in a fast and thorough manner, detecting moisture non-destructively through paint and coatings on wood up to a depth of $1.25^{\prime\prime}$ (30mm). The Skipper Plus can also be used to detect leaks and trace them to source both above and below decks.









