

MOISTURE

CM1700 MOISTURE METER



Non-destructive
measurement using
electrical impedance.



The NK CM1700 Moisture Meter is a non-destructive digital instrument designed to determine the moisture content in concrete, pavements, cement and anhydrite screeds, plaster and similar porous materials. Measurement is carried out using electrical impedance: the device generates a low-frequency electric field between its eight spring-loaded electrodes located at the base, without the need to drill into or damage the surface.

It is particularly **useful for checking the suitability** of surfaces before applying coatings, installing wooden flooring or carrying out waterproofing work, ensuring that the substrate is within the permissible moisture range for each system. Its 3.5 mm jack and Mini-USB connectivity allow measurements to be extended using external probes for relative humidity, temperature, dew point and wood moisture content.

APPLICATION

- **Surface preparation prior to painting:** verifying that the concrete or screed is within the permissible moisture range for the coating system.
- **Flooring installation:** checks prior to laying parquet, vinyl, carpet, epoxy resins or raised access flooring systems.
- **On-site and building inspection:** detection of damp areas, leaks or moisture build-up over large surfaces.
- **Monitoring concrete curing:** tracking moisture levels during the drying and setting process.
- **Waterproofing and rehabilitation:** verification prior to the application of waterproofing systems or repair mortars.

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GENERAL CHARACTERISTICS

- Non-destructive measurement using electrical impedance: requires no drilling or alteration of the substrate.
- 8 gold-plated spring-loaded electrodes with a measurement depth of 40–50 mm.
- 8 factory-calibrated scales for concrete, cement, anhydrite, plaster and a relative scale.
- Instant result when the device is placed on the surface, with no waiting time.
- Max Hold function for hard-to-reach areas.
- Connectivity: 3.5 mm jack + Mini-USB for external HR, temperature, dew point and wood moisture probes.
- Automatic switch-off to extend battery life.
- One-handed operation; compact and ergonomic design for field and laboratory work.
- High-quality transfective graphic LCD display with backlight.

MEASUREMENT PRINCIPLE

When the device is placed on the surface, the eight spring-loaded electrodes on the base generate a low-frequency electric field. The electrical impedance of the material varies depending on its moisture content: the higher the moisture content, the lower the impedance. The microprocessor converts this value into the result corresponding to the selected scale, displaying it continuously on the screen or holding the maximum value.

Measurements are taken at a depth of 40–50 mm, enabling moisture to be detected both in the surface layer and within the material, without the need for direct contact with the bare concrete in the case of the relative scale.

MEASUREMENT SCALES

The NK-CM1700 features 8 factory-calibrated scales for the main building materials:

Scale	Range	Material / Description
Concrete	0–6 % H ₂ O	Ratio of water weight to dry weight of the concrete. 6 % is the physically maximum possible. Only valid for pure concrete surfaces.
Cement screed	0–6 % H ₂ O	Moisture content in cement screeds, expressed as a percentage by weight.
Cement screed (CM)	0–4 % Carbide method	Approximate equivalent value to that obtained by the calcium carbide method (CM). Useful for comparison with reference tests.
Anhydrite screed	0–3.5 % H ₂ O	Moisture content in self-levelling anhydrite screeds, expressed as a percentage by weight.
Anhydrite (CM)	0–1.9 % Carbide method	Approximate equivalent value to the carbide method for anhydrite screeds.
Caisson scale	0.3–15.3 m	Relative penetration scale; compatible with other equipment using this same scale for comparison between gauges.
Relative scale	0–100 %	Comparative scale between materials. Does not represent an absolute percentage of water. Useful on coated surfaces where there is no direct contact with the concrete.
Plaster	0–10 %	For measuring moisture in plaster and finishing materials.

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INSTRUCTIONS FOR USE

- 1. Check the batteries:** ensure the device has sufficient charge before starting the measurement.
- 2. Select the scale:** choose the appropriate scale according to the material to be measured (concrete, cement screed, anhydrite, plaster, etc.).
- 3. Position the device:** place the instrument firmly on the surface, ensuring that all eight electrodes make good contact.
- 4. Reading the result:** press lightly and hold whilst reading. Note the value on the display.
- 5. Hard-to-reach areas:** use the hold function (Max Hold) to capture and retain the reading.
- 6. Multiple measurements:** take several measurements at points distributed across the surface to obtain a representative average. Moisture tends to be distributed unevenly whilst the concrete is drying.
- 7. Switching off the device:** press and hold the ON/HOLD button for 2 seconds. The device also switches off automatically after a period of inactivity.

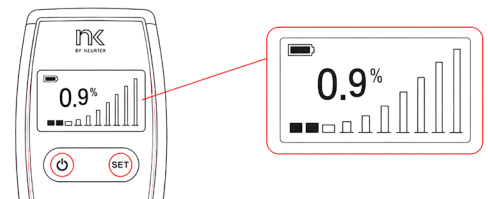
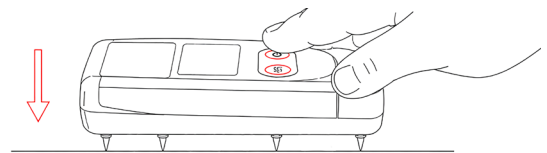
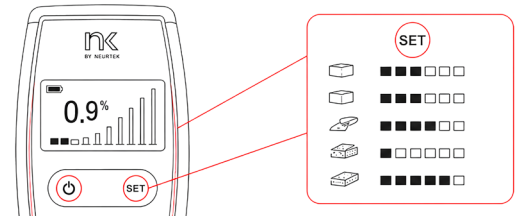
Technical tip: if the coating to be applied is thin, ensure that the moisture reading is taken from the most representative surface area possible. Moisture content may vary depending on the depth and heterogeneity of the material.

COMPATIBILITY AND LIMITATIONS

- Compatible with: concrete, cement and anhydrite screeds, plaster, porous flooring and non-metallic building materials.
- Not compatible with: metallic surfaces, conductive materials, rubber coatings, completely wet surfaces or layers containing electrical or conductive components — these materials significantly alter the measurement.
- Results on the relative scale or Caisson scale are comparative values; they do not correspond to an absolute percentage of moisture content.
- It does not measure accurately through layers of timber already laid on concrete.
- Do not apply excessive pressure to avoid damaging the spring-loaded electrodes.

MAINTENANCE AND STORAGE

- Clean the electrodes periodically with a soft, dry cloth to remove debris and ensure accurate readings.
- Store in a dry place, protected from extreme temperatures and knocks.
- Check and replace the batteries when the battery life is significantly reduced.
- Consult NK if there is visible damage to the electrodes or persistent abnormal readings.
- An optional traceable calibration certificate (SER-CT046) is available for accredited laboratories.



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TECHNICAL SPECIFICATIONS

Parameter	Value
Measurement method	Electrical impedance (non-destructive)
Number of electrodes	8 gold-plated spring electrodes + 2 sensor plates
Measurement depth	40–50 mm
Number of scales	8 factory-calibrated scales
Accuracy	± 0.5 %
Display	Transflective graphic LCD, 128×64 pixels with backlighting
Connectivity	3.5 mm jack + Mini-USB (external probes)
Compatible external probes	Air RH, temperature, dew point, wood moisture
Power supply	2 AA batteries (included)
Battery life	~20 hours with new batteries
Dimensions (L × W × H)	147 × 89 × 33 mm
Operating temperature	5 °C–40 °C
Mode of operation	Press the instrument against the surface
Additional functions	Maximum value hold · Automatic switch-off



MODELS

Moisture Meter

Code	Range
NK-CM1700	CM1700 Concrete Moisture Meter — 8 scales, 8 gold-plated electrodes, depth 40–50 mm, 3.5 mm jack + Mini-USB connectivity, graphic LCD display, 2 AA batteries included

Optional calibration	Code	Description
✓	SER-CT046	Calibration Certificate for moisture meter