

**Elcometer 7410**

**Concrete Moisture Meter**

**Operating Instructions**

elcometer®



**CE** The product meets the Electromagnetic Compatibility Directive.

The product is Class A, Group 1 ISM equipment according to CISPR 11.

Group 1 ISM product: A product in which there is intentionally generated and/or used conductively coupled radio-frequency energy which is necessary for the internal functioning of the equipment itself.

Class A product are suitable for use in all establishments other than domestic and those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.

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*Doc.No. TMA-0354 Issue 03  
Text with Cover No: 19520*

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**T**hank you for your purchase of this Elcometer 7410 Concrete Moisture Meter. Welcome to Elcometer.

Elcometer are world leaders in the design, manufacture and supply of inspection equipment for concrete and coatings.

Our concrete inspection products include a comprehensive range of concrete, and civil engineering inspection equipment. Our coatings products cover all aspects of coating inspection, from development through application to post application inspection.

Your Elcometer 7410 Concrete Moisture Meter is a world beating product. With the purchase of this product you now have access to the worldwide service and support network of Elcometer. For more information visit our website at [www.elcometer.com](http://www.elcometer.com)

## **1 ABOUT THIS GAUGE**

The Elcometer 7410 Concrete Moisture Meter is an accurate and easy to use non-invasive instrument for non-destructive measurement of the moisture content of concrete.

The gauge is very easy to use; switch the gauge on, press it against the surface and take a reading from the dial.

The analogue dial shows concrete moisture content up to 6%. The dial also includes scales which can be used for comparative or qualitative moisture readings for gypsum and other floor screeds.

**Note:** *The Elcometer 7410 Concrete Moisture Meter will not detect or measure moisture through any electrically conductive materials including metal sheeting or cladding, black EPDM rubber or wet surfaces.*

*The Elcometer 7410 Concrete Moisture Meter is not suited for taking comparative readings in the concrete substrate through thick coverings such as wood.*

## 1.1 Features

- Sturdy plastic case
- Easy-to-use
- Reading 'hold' facility
- Low battery indication

## 1.2 What the box contains

- Elcometer 7410 Concrete Moisture Meter
- Battery
- Soft storage case
- Calibration certificate
- Operating instructions

The Elcometer 7410 Concrete Moisture Meter is packed in a cardboard and foam package. Please ensure that this packaging is disposed of in an environmentally sensitive manner. Consult your local Environmental Authority for further guidance.



**To maximise the benefits of your new Elcometer 7410 Concrete Moisture Meter please take some time to read these Operating Instructions. Do not hesitate to contact Elcometer or your Elcometer supplier if you have any questions.**

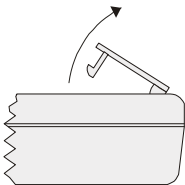
## 2 GETTING STARTED

### 2.1 Fitting a battery

Your Elcometer 7410 Concrete Moisture Meter is powered by a single 9 V battery. The battery is located in a battery compartment at the rear of the instrument.

To fit the battery:

1. Using a small screwdriver, coin or key, push back the tab of the battery compartment cover. The cover will then lift away.

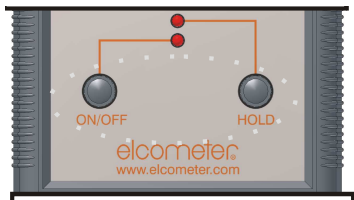


2. Fit the battery taking care to ensure correct polarity.
3. Replace the battery compartment cover.

When the battery is nearing the end of its useful life both lights on the front of the gauge flash for 3 seconds whenever the gauge is switched on. The battery must be replaced when this happens.

## 2.2 The buttons

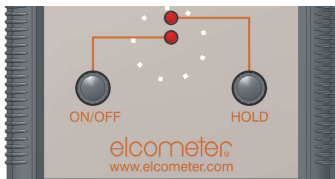
Your Elcometer 7410 Concrete Moisture Meter is controlled by the two buttons on the front of the instrument.



- ON/  
OFF:** Press once to switch the gauge on. The gauge will beep and then switch off automatically 10 minutes after the last button press or change of reading. The gauge can also be switched off manually by pressing the ON/OFF button once.
- HOLD:** Press once to hold the reading. Press again to release the reading. If the gauge switches off while the reading is on hold, the reading will be restored next time the gauge is switched on.



## 2.3 The lights

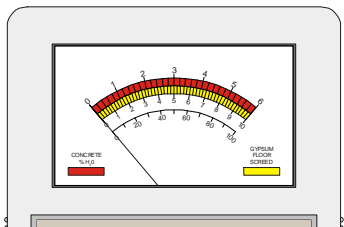


**Top light:** Starts to flash when the HOLD button is pressed to hold a reading. Stops flashing when the HOLD button is pressed again to release the reading.

**Bottom light:** Illuminates when the ON button is pressed and remains illuminated until the gauge switches off.

When the battery is nearing the end of its useful life both lights flash for 3 seconds whenever the gauge is switched on.

## 2.4 The dial



**Top scale:** Graduated from 0% to 6%. Use this scale to obtain readings of concrete moisture content.

**Bottom scales:** Graduated from 0 to 10 and 0 to 100. Use these scales to obtain comparative or qualitative moisture readings for gypsum and other floor screeds.

**Note:** *The bottom scales do not provide quantitative readings for moisture content.*

### 3 TAKING A READING

Before you start, remove any dust or foreign matter from the probes of your gauge. Ensure that the concrete surface being tested is clean and bare and free from dust, dirt or standing water.

1. Switch on the gauge.
2. Press the moisture meter firmly against the surface being measured ensuring that all the spring-loaded probes on the rear of the gauge are fully compressed.

The moisture content will be displayed on the dial.

3. Wait for the position of the needle to stabilise before taking a reading; press HOLD to retain the reading on the dial if required.
4. Repeat steps 2 and 3 a number of times and record the highest value.

## **4 A GUIDE TO MOISTURE TESTING**

### **Drying time**

Concrete must be allowed to dry to an adequate level before applying coatings or installing sheet material, tile, wood, etc. Manufacturers of these coating systems and sheet materials generally require moisture testing to be performed before application on a concrete surface. Moisture content measurement is one such method of testing. Excessive moisture in or permeating from concrete after application of a coating, or covering with sheet material, can cause failures such as condensation, blistering, delamination, movement and general deterioration of the finished product. There is also a risk of promoting microbial growth.

No exact period can be specified for the drying time of concrete as this is affected by temperature and humidity as well as concrete curing times and other factors. During the drying period and prior to applying the coating or sheet material, the concrete surface should be checked regularly to monitor moisture content.

For best and most accurate results, tests should be carried out after the environment in which the concrete is located has been at normal service temperature and humidity for at least 48 hours.

All artificial heating or drying equipment should be turned off at least 96 hours before final

readings are attempted, otherwise results may not accurately reflect the amount of moisture present or moisture movement in the concrete during normal operating conditions.

### **Removal of covering materials**

All covering materials, adhesive residue, curing compound, sealers, paints etc., shall be removed from the test surface prior to testing. The test surface must be clean, bare concrete.

Observe all health and safety practices relevant to cleaning and removal of these types of materials. Removal of covering materials and cleaning, if required, shall take place a minimum of 48 hours prior to testing.

Use of water based cleaning methods that could lead to elevated surface and/or sub-surface moisture levels in the concrete are not recommended, and testing after such treatment could result in elevated readings.

No visible water in liquid form should be present on the concrete at the time of testing.

Avoid testing in locations subject to direct sunlight or sources of heat. Use of artificial aids for accelerated drying of concrete is not recommended. If they are being used it is recommended they should be turned off at least four days before taking final readings.

## **5 MAINTENANCE**

The Elcometer 7410 Concrete Moisture Meter is designed to give many years reliable service under normal operating and storage conditions.

Regular calibration checks over the life of the Elcometer 7410 Concrete Moisture Meter are a requirement of quality management procedures e.g. ISO 9000 and other standards.

Follow the instructions given on the optional calibration check plate (see “Accessories” on page 13) to confirm whether your gauge is calibrated correctly.

If your gauge does not meet calibration tolerances, contact Elcometer or your local Elcometer supplier.

The instrument does not contain any user-serviceable components. In the unlikely event of a fault, the instrument should be returned to your local Elcometer supplier or direct to Elcometer. The warranty will be invalidated if the instrument has been opened.

Details of Elcometer offices around the world are given on the outside cover of these operating instructions. Alternatively visit the Elcometer website, [www.elcometer.com](http://www.elcometer.com)

## 6 ACCESSORIES

Your Elcometer 7410 Concrete Moisture Meter is complete with all the items needed to take measurements.

The following optional accessory is available from Elcometer or your local supplier:

Calibration check plate    KT007410P001

(Instructions for use of the calibration check plate are supplied with the plate.)

## 7 TECHNICAL SPECIFICATION

Measurement range: 0% to 6%

Accuracy: 0.5%

Resolution: 0.2%

Weight: 290 g (10.2 oz)

Dimensions: 155mm x 85mm x 43mm  
(6.1" x 3.3" x 1.7")

Battery: 9 V, PP3/6LR61<sup>a</sup>

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- a. *Batteries must be disposed of carefully to avoid environmental contamination. Please consult your local environmental authority for information on disposal in your region.*

***Do not dispose of any batteries in fire.***

## **8 RELATED EQUIPMENT**

Elcometer produces a wide range of concrete and coatings inspection equipment. Users of the Elcometer 7410 may also benefit from the following Elcometer products:

- Elcometer Adhesion/Bond Strength Testers
- Elcometer Concrete Crack Microscopes
- Elcometer Concrete Covermeters
- Elcometer Concrete Test Hammers

For further information contact Elcometer, your local supplier or visit [www.elcometer.com](http://www.elcometer.com)