**INFORMATION**

## Material Moisture Measurement with ⦾ GREISINGER -handheld instruments

### METHODS

○ **Resistive measuring method**

(GMR 110, GMH 3810, GMH 3831, GMH 3851)
The electrical resistance often depends on the material moisture. Therefore the devices measure the (possibly extremely high) values of resistance and convert them to the displayed value by means of integrated characteristic curves. The temperature has to be compensated especially at the measurement of wood – all GREISINGER- instruments have an integrated temperature compensation. In most cases the contact is realised by nails that are driven into the material are used to contact.

○ **Capacitive measuring method**

(GMK 210, GMK 100, GMI 15)
The dielectric properties of an object are often a good indicator for its material moisture. The dielectric coefficient of water is considerably higher than that of dry lumbers or building materials. Therefore the total dielectric coefficient of the measuring object can be easily used to get its material moisture. For the measurement the device has to be applied on the material. Precondition therefore: planar surfaces, no metallic elements.

○ **Relative humidity**

(i.e. GMH 3330 + TFS 0100 E)
Another method is to measure the material moisture indirectly by means of the relative humidity: The humidity in a sealed hole within a material depends on the material moisture. By means of a so-called sorption isotherm or a corresponding table the material moisture can be calculated from the humidity.

○ **Dry method**

The oven dry method can be used for reference point measurement with highest accuracy. The moist material is weighed and afterwards dried at increased temperature until no weight loss is detectable anymore. The material moisture can be calculated from the moist and arid weight.

### UNITS

○ **Material moisture u (also „atro"):**

relating to dry mass
material moisture u [%] =
(mass wet - mass dry ) / mass dry * 100
Particularly important for carpenters, joiners, etc.

○ **Moisture content w:**

material moisture related to wet total mass
moisture content w [%] =
(mass wet - mass dry ) / mass wet * 100
Particularly important for the evaluation of combustibles.

○ **„Digit" (GMI 15)**

The displayed value is relative, that means without a physical unit. This can be used to get comparative moisture information of the same materials. Lower values indicate less moisture, higher values indicate therefore more moisture.

*For further information on this topic please see the devices' manuals and our homepage www.greisinger.de*

## INDICATOR FOR MOISTURE IN WOOD AND BUILDINGS



HIGHLIGHTS:

○ nondestructive measurement

○ easy and fast moisture rating

### GMI 15
*Art. no. 600059*
Indicator for moisture in wood and buildings

**General:**

Device for high-speed determination of moisture in buildings, contracting work etc. The GMI 15 allows detection of moisture in wood down to a depth of approx. 3 cm and in concrete or wash floor down to a depth of approx. 4 cm. Detection of moisture behind ceramic tiles and/or various wall or floor coverings. To check moisture simply place device on the surface to be measured - no injection into the measuring object required. The displayed values by „digit" are relative, that means the values can be well compared.

**Application:**

Humidity indication for i.e. estate agents (for fast control state of buildings), property management, house owners, architects, building experts, building contractors, etc.
**Note:**
The GMI 15 is an indicator for the fast estimation - it does not replace precision instruments like the GMH 3810, GMH 3831, GMH 3851 or GMK 100

**Specifications:**

| | |
|---|---|
| **Display:** | 3½-digits, 13 mm high LCD |
| **Display range** | |
| **Concrete / floor** | 0 ... 5 = dry<br>6 ... 9 = humid, normal humidity level<br>10 ...  = wet |
| **Wood / fibre glass reinforced polyester:** | 0 ... 3     ~ 0 ... 12 %     : dry<br>3 ... 6     ~ 12 ... 20 %   : air-dry<br>6 ... 11    ~ 20 ... 30 %   : wind-dry<br>11 ...      ~ 30 %  ...      : wet |
| **Power supply:** | 9 V battery |
| **Battery life:** | approx. 60 h |
| **Working temperature:** | 0 ... 50 °C (material not frozen) |
| **Storage temperature:** | -20 ... +70 °C |
| **Relative humidity:** | 0 ... 80 % RH (non-condensing) |
| **Housing:** | Impact resistant ABS plastic housing |
| **Dimensions:** | approx. 106 x 67 x 30 mm (H x W x D) |
| **Weight:** | approx. 150 g (ready for use) |
| **Scope of supply:** | Device, battery, manual |