




**Protimeter Floor Testing Kit BLD7705 – Quick Guide**

The Protimeter Floor Testing Kit enable you to make quick assessments of the relative moisture condition of solid floors and to take precise equilibrium relative humidity (ERH) measurements in accordance with relevant flooring industry codes of practice.

Kit Contains		
1	Protimeter Aquant moisture detector	BLD5760
1	Protimeter Hygromaster c/w Hygrostick	BLD4700
1	Hygrostick extension lead	BLD5802
20	Humidity Sleeves	BLD4902
1	Humidity Box	BLD4711

Protimeter Aquant	
  	<p>The Aquant is used to make a quick assessment of the relative moisture condition of the solid floor. It is very helpful for identifying the areas where the more time-consuming equilibrium relative humidity (ERH) measurements should then be taken.</p> <p>To use, hold the Aquant against the slab as shown and note the reading. The instrument should be held at an angle of ~30°, so that both the sensor bulge and the front edge of the meter are in contact with the surface.</p> <p>Green zone readings: 0-160. Safe dry condition.                  Yellow zone reading: 161-200. Dry/borderline condition.                  Red zone: 201-1000. At risk/damp condition. Potential for moisture related failure of floor coverings exists. Before laying the floor, establish the actual moisture level in terms of ERH by using the Hygromaster and humidity box or humidity sleeves.</p>

Protimeter Hygromaster	
	<p>The Hygromaster measures relative humidity and temperature. For flooring applications, it is used in <b>combination</b> with a <b>humidity box</b> or <b>humidity sleeves</b> to measure the equilibrium relative humidity (ERH) of solid floors prior to laying decorative floor coverings. The humidity (and temperature) measurement is made with the removable and replaceable Hygrostick sensor, shown at left plugged into the top of the instrument.</p>

### Surface ERH readings – using Hygromaster and Humidity Box



The humidity box is a block of closed cell, high-density foam that is used to isolate a pocket of air at the floor surface from the surrounding environment.

The box is placed on the floor slab and left for sufficient time for the air pocket to equilibrate with the relative humidity within the slab itself.

The Hygromaster is then used to measure the relative humidity of the air pocket.

GE Sensing recommend that you use the Hygromaster and humidity box in accordance with the guidelines of applicable standards. The quick reference guideline is as follows:

1. Use the Aquant to identify the areas that require measuring with the Hygromaster and humidity box
2. Place the box or boxes in position, ensuring that the hole in the side of the box is plugged.
3. Put a brick (or similar) on top of the box to ensure it stays in position.
4. Leave for sufficient time for equilibrium to be reached (this will be for a minimum of 24 hours and subject to slab thickness and surface finish – refer to relevant standards for more information).
5. Remove the plug from the box and insert the Hygrostick into the hole. The conical sleeve fitted to the Hygrostick makes a seal with the hole when pushed firmly into position.
6. Leave the Hygrostick in place for minimum of 30 minutes, to allow it to acclimatise with the conditions within the humidity box.
7. Connect the Hygromaster to the Hygrostick using the extension lead as shown and take the humidity measurement.
8. Check readings at 5-minute intervals. It is safe to assume the probe has acclimatised when 3 concurrent readings are within  $\pm 0.3\%$ rh of each other.
9. Interpretation of readings (as per BS 8201, 8203, 5325). Less than or equal to 75%rh: dry. If there is any doubt or ambiguity regarding the slab moisture level, consult with the manufacturers of the specified adhesives and/or decorative floor coverings **before laying**.

**Sub-surface ERH readings – using Hygromaster and Humidity Sleeve**



As an alternative to surface ERH readings, Hygrosticks can be put into humidity sleeves that are placed into holes drilled into the slab.

Whilst this technique is not incorporated in British Standards it is widely used in the UK, Scandinavia and Continental Europe.

The sleeve technique offers the following advantages:

- Provides a more accurate measurement on the ERH of the concrete
- Is unobtrusive and tamper-proof (when compared with humidity boxes)

GE Sensing recommend that you use the Hygromaster and humidity sleeves in accordance with the guidelines of applicable standards. The quick reference guideline is as follows:

1. Check if it is suitable or desirable to drill holes in the floor; if not, use the surface humidity box test method. The sleeve test is only suitable for solid slabs where the DPM (or under floor heating system, if incorporated) is known to be at a depth of at least 75mm below the surface.
2. Use the Aquant to identify the areas that require measuring with the Hygromaster and humidity sleeve
3. At these points, drill a 16mm diameter clearance hole to a nominal depth of 50mm
4. Push the sleeve into the hole. Ensure that the sleeve flange is flush with the surface and ensure that the sleeve cap is put in place.
5. Before taking measurements, leave for 24 hours minimum for equilibrium conditions to be reached.
6. Remove the humidity sleeve cap and insert the Hygrostick. When pushed firmly into place, the conical sleeve fitted to the Hygrostick makes a seal with the humidity sleeve.
7. Leave the Hygrostick in place for minimum of 30 minutes, to allow it to acclimatise with the conditions within the humidity sleeve.
8. Connect the Hygromaster to the Hygrostick using the extension lead as shown and take the humidity measurement.
9. Check readings at 5-minute intervals. It is safe to assume the probe has acclimatised when 3 concurrent readings are within  $\pm 0.3\%$ rh of each other.

Interpretation of readings: generally speaking, readings of less than or equal to 80%rh are considered dry. If there is any doubt or ambiguity regarding the slab moisture level, consult with the manufacturers of the specified adhesives and/or decorative floor coverings **before laying**.

**Relevant Flooring Industry Standards**

The Hygromaster and humidity box can be used to measure moisture levels in accordance with the requirements of the following standards:  
British Standards

- BS 8203 – Code of practice for installation of resilient floor coverings
- BS 8201 – Code of Practice for flooring of timber, timber products and wood based panel products
- BS 5325 - Code of practice for installation of textile floor coverings