

Moisture Readings For Concrete & Cementitious Screed

When fitting wooden flooring it is vital that all substrates are structurally sound, flat and dry.

All new screed or concrete must be completely dry – allow at least 1 month for every inch depth of new concrete/screed (approx. 1 day per mm of depth.) Be aware that depths of concrete / screed which total over 60mm may take twice as long to dry out – you only have to look at the amount of water mixed in to make concrete/screed to realise quite how much water there is to dry out! (Also temperature and environmental moisture levels will affect drying times).

Existing screeds/concrete must be checked for moisture – this can easily be done by hiring a specialist meter (hygrometer).

The easiest method is to use a Tramex meter to measure moisture levels in concrete as this is a good noninvasive test. Otherwise, to test the concrete properly you will need to drill small holes in several places in the concrete substrate and test leaving the hygrometer probe in the holes overnight. Either the Tramex meter or the Hygrometer should give an accurate reading for the depth of the screed (please refer to the relevant meter instructions). It is possible to use a temperature/humidity room meter which will give a humidity reading for the room as a whole (see our website).



A very rough indication of the dryness of the concrete can be approximated by taping a 2m² piece of non-permeable plastic over the concrete and stand the humidity meter under the plastic 'tent'. If left overnight the meter will give an indication of the level of dryness of the screed/concrete. Please note that this will only give a very approximate measure

and proper testing using a hygrometer should always be done if you have any concerns about moisture in the subfloor.

If excess moisture is found in the concrete/screed subfloor, the problem must always be rectified before the wooden floor is laid.

A reading greater than 2.5%CM (~ 4% Tramex) for a concrete subfloor indicates that a suitable damp-proof membrane must always be installed – either a 2 coat/2 part liquid layer (e.g. Sika primer MB or Sika-Bond Rapid DPM) or, in the case of a floating floor, a properly installed heavy-duty, non-permeable plastic layer (make sure the ends of the plastic are continued up into the walls to fully protect the wooden floor).

If using UFH a reading greater than 1.8%CM (~ 3% Tramex) for a concrete subfloor indicates that a suitable damp-proof membrane must always be installed.

We usually recommend gluing engineered boards to screed containing UFH pipes as this will give a better transfer of heat. It is important to use an elastic adhesive (such as Sikabond) and ensure that the wood flooring is properly acclimatised and the UFH system fully commissioned.

Although there is not an exact comparison between moisture content by weight and relative humidity, a concrete screed with a moisture content equal to or below 2.5%CM (1.8%CM if using UFH) and a room relative humidity of 45% - 65% (at time of fixing) should indicate suitable conditions for laying wooden flooring. However, it is important to note that due to differences in size, number and distribution of pores in the concrete, the range of 2-3%CM may still exceed 75% RH – in which case further drying time or a DPM will be necessary.

Laitance is always present on new concrete bases and screeds and must be removed. Laitance is formed from a mixture of water, cement and the fine particles of the screed or concrete mix that is brought to the surface when placing and trowelling up. As the concrete or screed cures this mixture dries to form a crust or thin layer, known as laitance. Laitance is friable and can therefore either delaminate under traffic conditions and impact or it may easily dust away under abrasion from traffic. The heavier the use of the floor, and the greater the temperature fluctuations that the

floor is subjected to, the more important this is.

Laitance is a major cause of dusty and damaged concrete floors. Removal of any laitance is vitally important before any DPM or adhesive is used, leaving the hygrometer probe in the holes overnight. Either the Tramex meter or the Hygrometer should give an accurate reading for the depth of the screed (please refer to the relevant meter instructions). It is possible to use a temperature/humidity room meter which will give a humidity reading for the room as a whole (see our website).

Moisture Readings for Anhydrite (Gypsum) Screed

In all cases, Anhydrite type screeds should be sound, smooth and dry. All laitance should be removed during the initial grinding stage; however, checks should be made prior to proceeding with the application of any primer or adhesive. If laitance should still exist, this should be mechanically removed by further grinding/sanding and the dust fully vacuumed off. It is imperative that checks are also made to determine the moisture content of the floor and this should be carried out using a Hygrometer.

An anhydrite screed must have a moisture reading of equal to or less than 0.5%CM before it is suitable for installing a wooden floor. If excess moisture is found in the anhydrite screed subfloor (i.e a meter reading > 0.5%CM), further time should be allocated to enable the screed to reach an acceptable level of dryness. NEVER apply a vapour proof membrane over a Gypsum based screed as these types of screed could potentially rot.

If using UFH a reading greater than 0.3%CM for the anhydrite screed indicates that more time is required to dry. This may be accelerated by the use of the UFH system.

We would usually recommend gluing engineered boards to screed containing UFH pipes as this will give a better transfer of heat. When fixing wooden boards it is important to use an elastic adhesive (such as Sikabond).

N.B. The calibration of the meter is very important, if you use a meter calibrated for wood on concrete the results will be very high due to the density of the concrete.

CM stands for Carbide Method. This is one of several scales of measurement used when measuring moisture in concrete - it is important to make sure you are using the right scale of measurement when testing – please refer to the meter instructions.

RH (Relative Humidity) is another measurement used when referring to air moisture.

Disclaimer

Our fitting and maintenance advice is tested and assembled to the best of our knowledge however, is still considered as a non-binding recommendation. Responsibility of the outcome of our recommendations rests solely with the you, the user. When an updated version of this fitting/maintenance sheet is released this one will no longer be valid.

