Jordan Andrews

Quick guide to underfloor heating

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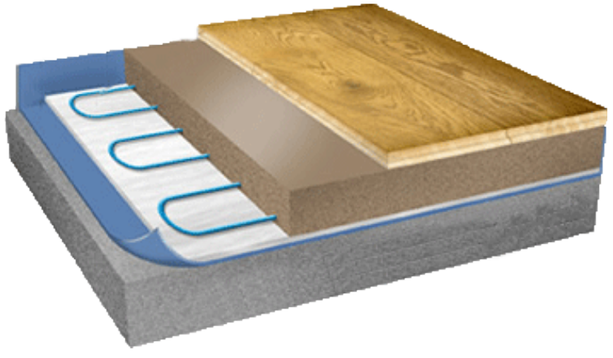
This guide outlines underfloor heating systems and their compatibility with wood floors. This is a guideline only, we would always recommend that you view the Flooring and under floor heating manufacturer's recommendations.

Flooring type

For a floor to perform well with under floor heating it is important that a stable product be selected. The timber species can be a factor and also the width of the board. We would always recommend a good quality engineered board be laid over a solid construction; this is due to the stability of the product reducing the possibility of cumulative shrinkage.

Screed

If a water under floor heating system is installed within the screed the floor cannot be laid until the screed is dry. The moisture content of the screed cannot exceed 65% RH (relative humidity). If the screed is of sand and cement construction then a liquid DPM (damp proof membrane) can be used such as Bona R580 (please consult with technical support if other dpm used). If an anhydride screed (i.e. calcium Sulphate pump screed) is used then a liquid dpm cannot be used. The moisture content of the screed should be taken using a fixed humidity box or similar. The under floor heating has to be switched off three days prior to testing, and remain off while testing is in progress.



Above:
W ater underfloor heating system with screed

Temperatures

Engineered wood flooring requires a maximum temperature of 27C (according to the majority of wood flooring manufactures) to ensure that excessive moisture loss or dimensional change is not incurred. With water fed systems the temperature of the water flowing out from the boiler to the sub-floor pipes to obtain a surface floor temperature of 27C is typically in the range of 40-55C. The heat provided by the underfloor system must be of an even distribution thus allowing the boards to move evenly from the heat. The recommended temperature of a heated screed is to be below 65% relative humidity in order to work with wood flooring. Hardwood flooring requires a suitable temperature to remain stable and to prevent excessive moisture loss and accompanying dimensional change. The under floor heating must also provide an even distribution of heat so as to allow an even movement within the flooring element. Any rugs or items of furniture placed on the floor without airflow beneath can cause the floor surface temperature to increase beyond the above recommendations. In this situation it is highly possible that the floor boards could shrink causing excessive gaps and in extreme cases the floor could also delaminate.

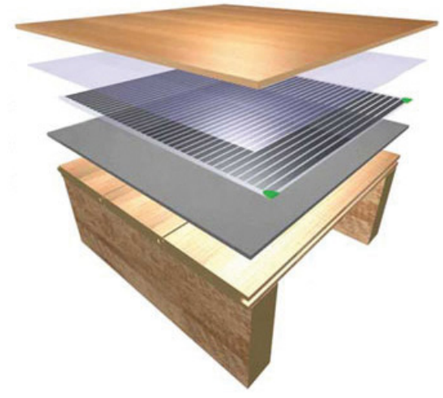
Stability

Good stability is a sign of a well performing floor and it can be affected by the product construction, moisture content, timber specie and timber dimensions. Floors can be fully bonded using correct adhesive or floated using a suitable underlay such as heat flow.

Moisture content

Wood flooring laid over underfloor heating reaches a low moisture content though it does depend on the floor temperature and the room humidity. If wood flooring is to be installed at the recommended 6-8% moisture content, and the underfloor heating is expected to be turned off continually during warm humid periods of the year, greater then normal provision for expansion is likely to be required.

If wood flooring with an higher moisture content is to be used (e.g. 9-10%) it is advisable to maintain a narrower range of humidity of between 50-65% relative humidity using humidification if necessary in drier periods to avoid excessive shrinkage)



Above:
Typical electric underfloor heating system

Installation

Floors selected then a suitable underlay such as Duralay Heatflow should be used, this underlay has a low tog rating and will therefore reduce thermal resistance.

Prior to installation the under floor heating system will have been commissioned as per manufacturer's recommendations. The flooring will be laid with the under floor heating system switched off. A room temperature of 18 – 20 ºC should be maintained during installation of the floor and it may be necessary for an independent heat source to be used to maintain this temperature. Floor surface levels must be within industry standards of +/- 3mm over a 3l/m straight edge so as to avoid any airspace under the floor as this will cause undesirable temperature fluctuation.

Once laid and the adhesives fully cured the under floor heating can be switched on. The floor temperature must be raised very slowly, from a low starting point over several weeks to the maximum recommended temperature of 27ºc. A rapid rise in temperature from cold to hot must be avoided.

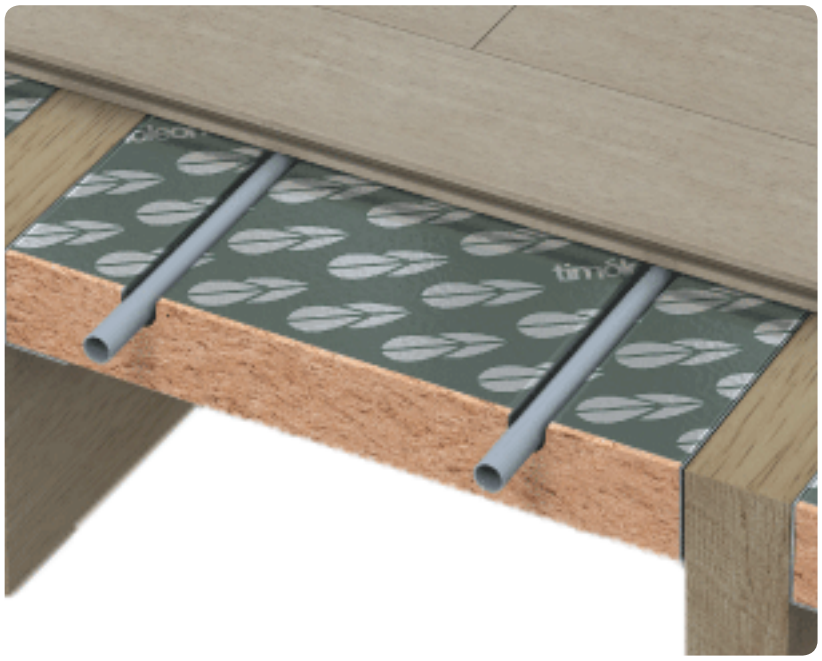
If the floor protected after laying it is important that the under floor heating remains off so as to avoid excessive build up of heat.

Tips

1. Read the manufacturers instructions, this one sounds obvious, but you'll be surprised how many people fail to read through the manuals before use. Specific steps can vary from heater type to heater type, and from one brand to another, so make no assumptions.

2. Do not be tempted to turn on the system immediately after laying the finished floor. Depending on the floor covering please allow time for the adhesive or levelling compound to cure completely (see manufacturers guidelines). Bring the system up to temperature gradually in stages over the next few weeks. We recommend turning up the heating 1°C per day to a maximum 27°C (floor temperature).

3. Most heating systems are direct acting. However depending on the subfloor and the floor covering installed there may be a certain amount of thermal lag in the system (heat-up and cool down periods). Please anticipate these when switching your system on and off. Careful time clock control of on/off periods ensure maximum comfort at minimum cost.



Above:
Typical water underfloor heating system

4. Set the thermostat to your desired comfort level and leave it. Setting the thermostat to a high temperature will not make the room get to temperature quicker. It will merely over heat the occupants once the set temperature is reached.

5. The temperature of the actual floor can be varied to suit individual comfort levels. We recommend a maximum floor temperature setting of 28°C for optimum comfort conditions.

6. Ensure the underfloor heating system is working correctly before laying your flooring. This is very important as you dont want to pull up a newly laid floor to repair a loose wire.

7. If you are unsure about any aspects of your underfloor heating please contact the manufacturer to avoid damaging the system.

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