timoleon

Installation Guides, Data Sheets & Technical Index's

Floor Finishes

TX 104

Detailed technical information on the use with underfloor heating.

INTRODUCTION

The selection of floor finish over an underfloor heating system is important. The resistance of the floor finish (how much it insulates) will affect the heat output. Some floor finishes have temperature thresholds and it is important that the underfloor heating system is designed not to compromise these.

The thickness of the floor finish will also affect the warm up and cool down time. High mass systems will take longer to warm up and this must be considered in the design of the system.

Timóleon underfloor heating systems are designed to accommodate the majority of situations however our design team is available to answer any questions on how floor finishes affect an underfloor heating system.

Below are the resistances of some floor finishes. The underfloor heating system will generally be designed with a covering 1.5 Tog floor finish.

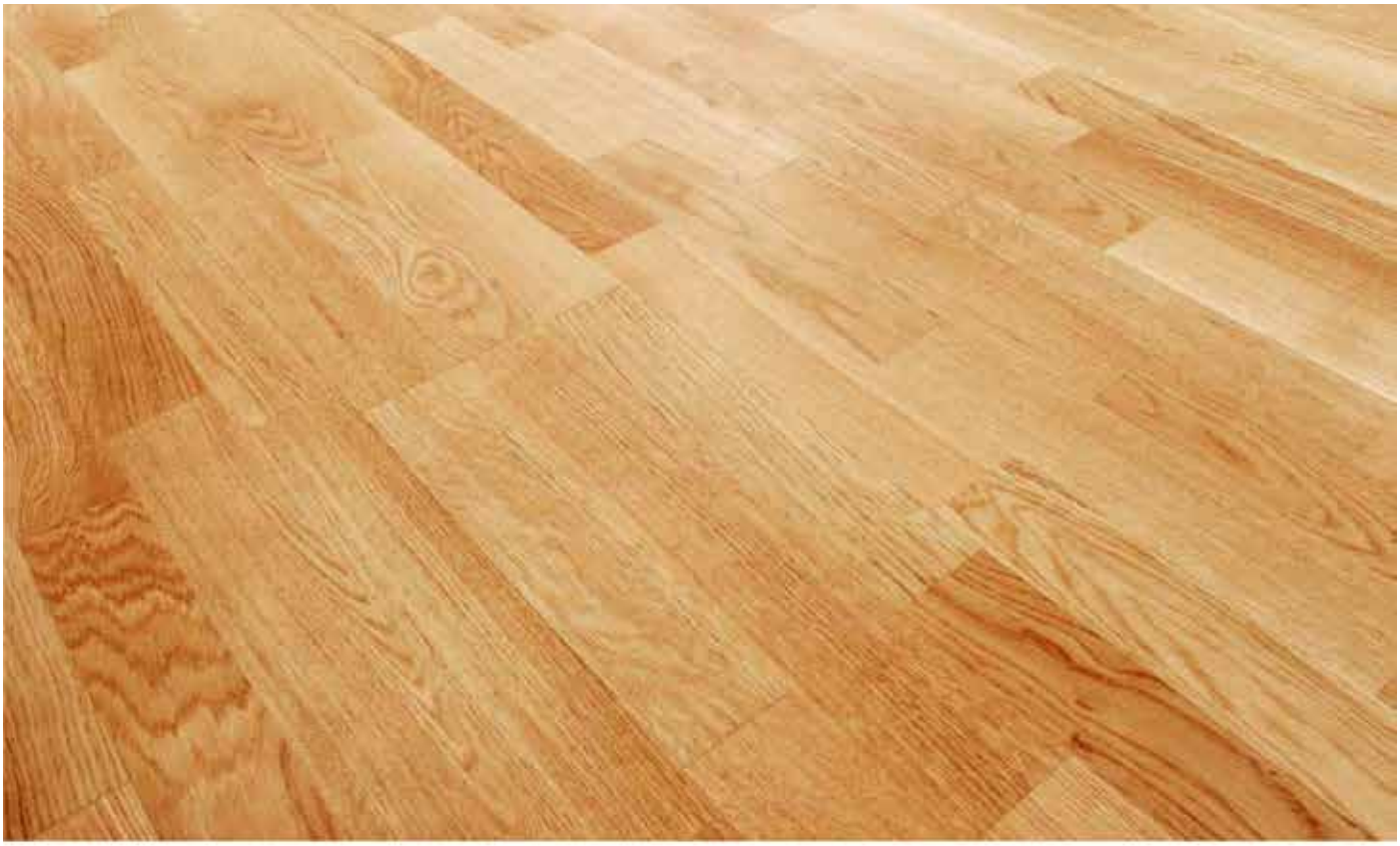
In all cases the manufacturer's and installer's guidelines must be followed. If you need further advice please call our office on 01392 363605.

Typical Floor finish data				
Type	Conductivity (W/mK)	Thickness (mm)	Resistance (m^2K/W)	TOG
Ply/Chipboard	0.14	22	0.157mK/W	1.57
Oak	0.16	18	0.113mK/W	1.13
Ceramic Tile	0.84	15	0.017mK/W	0.17
Combined carpet and underlay	0.0572	15	0.262mK/W	2.62
Marble	2	20	0.001mK/W	0.10

VINYL

Vinyl floor finishes work well with UFH. The resistance of the finish is relative low compared to other floor finishes that will allow heat to flow from the floor. However most manufacturers' have restrictions on the maximum floor surface temperature. This can be approximately 26°C. This limits the floor to an heat output of around 65 W/m^2, which should be satisfactory for most new builds.

Please check with the manufacture of the floor finish for its suitability, if there is a restriction please call our office to investigate the implications.



TIMBER FLOOR

Timber floors are subject to expansion and contraction according to the amount of moisture in the local environment. As a result solid hardwood boards may contract slightly during winter months and expand slightly during the summer.

In addition to conventional timber boarding engineered laminates are available. These boards have layers of cross-bonded ply faced with a thick layer of timber and are inherently more stable than solid wood boards. They are generally supplied at a suitable moisture content to be laid over UFH. For any type of timber being used consideration must be given to the moisture content of the timber prior to being laid. Typically this should be around 8-10%.

Recommendations:

• Always check with the flooring supplier that the material to be supplied is suitable for use with underfloor heating. Care should always be taken to make sure conditions on site are suitable for both acclimatising and laying any timber floor.

•Timber flooring should have a moisture content of 8-10%.

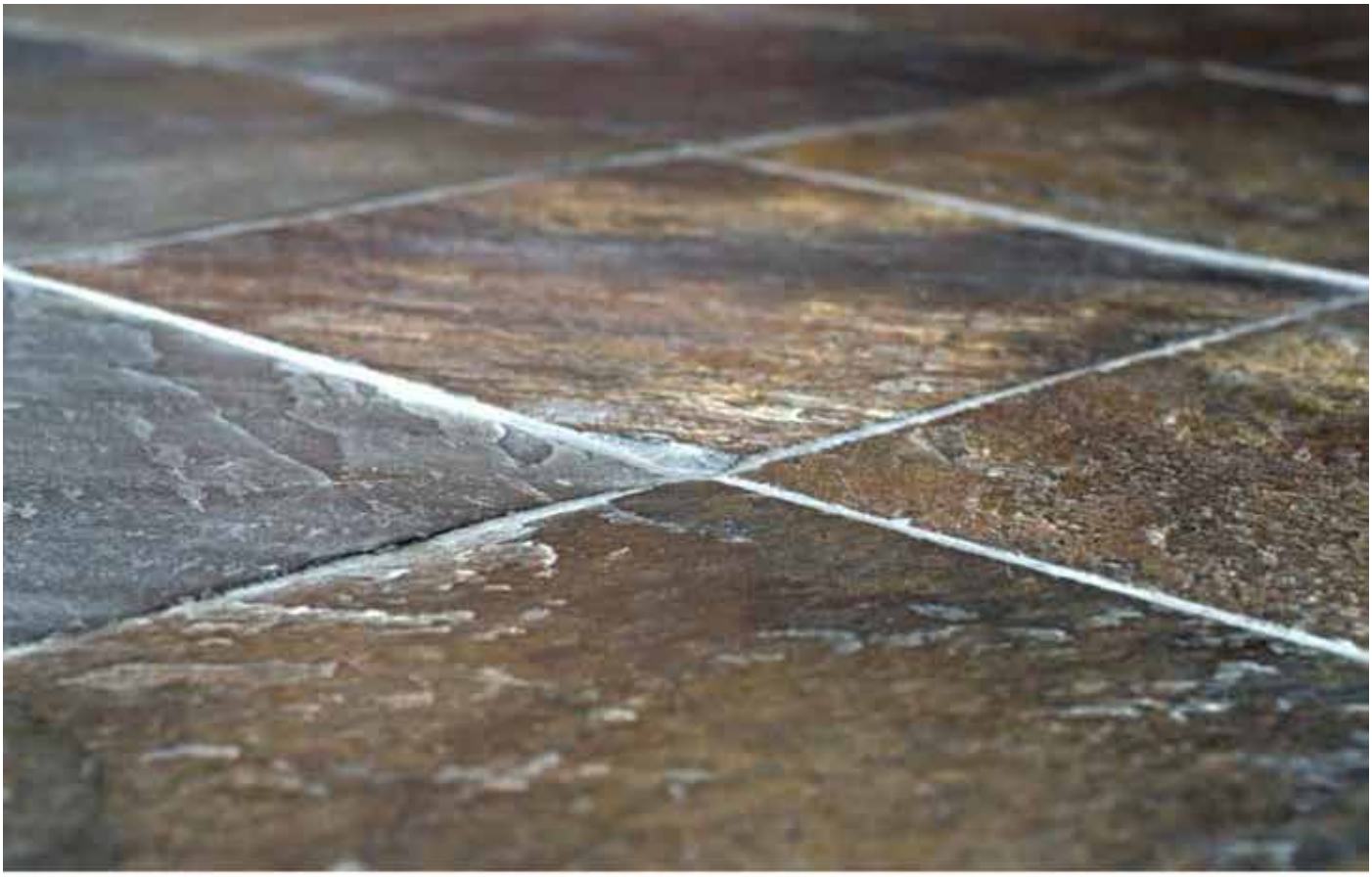
• Where timber floors are to be laid over screed the moisture content of the screed should not exceed 2%.

• The thickness of the floor finish will affect the performance of an underfloor heating system, please check with our office.

• Always refer to the manufacturer's instructions.

Further information from the Timber Research and Development Association can bfound at www.trada.co.uk

TRADA member



CERAMIC & STONE

Underfloor Heating is suitable for use under any ceramic or natural stone floor tiles including slate, marble, porcelain, terracotta and limestone.

Ceramic tiles and stone finishes are both good conductors of heat and as a result are very well-suited to Underfloor Heating. Care must be taken when laying over suspended or battens floors. The tiles should be properly supported, the tile manufacturers' instruction must be followed.

Tiles should be bonded using a flexible adhesive such as BAL fastflex. Tiles must be laid in accordance with BS 5385 and to the manufacturer's and tile layer's instructions.

Although the conductivity of tile finishes is very good an increase in the tile thickness (and therefore thermal mass) will increase the time it takes to warm up the floor.

Further information from the Stone Federation can be found at www.stone-federationgb.org.uk

CARPETS

When used with radiators carpet and underlay with high Tog values is preferred as this increases the effective insulation of the floor.

Underfloor heating on the other hand is more effective when used with carpets and underlay with lower combined TOG values. This enables heat to be transferred to the emitting surface of the carpet more easily. The higher the TOG value of the carpet and underlay the greater the reduction in output from the underfloor heating system.

The Carpet Foundation carried out some research that showed that the actual resistance of carpet when used with underfloor heating was on average 1 TOG lower than the published data. For example the published tog rating of a particular carpet and underlay is 2.63. When tested with underfloor heating the carpet and underlay had an actual Tog value of 1.6. This research shows that carpet and underlay can be used with underfloor heating without impeding the heat into the room.

Recommendations:

• The carpet and underlay should not have an effective combined Tog value of more 1.5 (published 2.5 Tog)

• Good underlays with Tog values less than 1 are available from companies such as Duralay and Floorwise.

• Thick wool carpets should be checked as they may have a high TOG value
• Felt and crumb underlay should also be checked

• Where the carpet is due to be laid on a wooden subfloor it is very important to ensure that adequate time has been allowed for the wood to condition whilst the underfloor heating is running to avoid inconsistency from changes in moisture levels.

• Always refer to the manufacturer's instructions

Further information from the Carpet Foundation can be found at www.carpetfoundation.com

streamline

STREAMLINE - SERVICING & SUPPORT

Timóleon Streamline provides a specialist service that commissions, services and troubleshoots underfloor heating systems.

Underfloor heating systems have a well deserved reputation for reliability, but from time to time, can provide the owners with problems. Systems that develop problems, haven't been commissioned properly or have been poorly serviced will inevitably become less effective and less energy efficient.

A properly commissioned and maintained system will keep it working as efficiently as possible throughout its life time, will reduce energy bills and will maximise the life of its components.

To enquire about servicing or commissioning your underfloor heating system or for more information about any of our products, please call us on 0845 6803605.

HELP & ADVICE

Questions?
Call the project team on
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Change is coming.
We are ready.
We can help you face it.