

What are the best floor coverings for underfloor heating?

It has become fairly common knowledge that tiles are one of the best performing floor finishes to combine with underfloor heating, however there is lots of bad advice that circulates regarding other finishes such as carpet or wood based finishes. This is our run down on what works best:

Polished Concrete

The best floor coverings for use with underfloor heating are hard stone based surfaces as they have the least resistance and transfer heat effectively. As the most thermally conductive of all floor coverings, energy from the heating pipe array can transfer quickly to the surface. Increasing the thickness will have little effect on power output, but will slightly increase heat-up times. Polished concrete is often overlooked, this benefits further than other finishes as the heating pipe is fixed within the polished concrete slab, removing any potential layers that may provide thermal resistance. In terms of performance and comfort polished concrete is the number one choice to combine with underfloor heating.

Stone and ceramic surfaces

As mentioned above hard surfaces such as stone and ceramic tile heat very effectively, so there is no surprise this is second on the list. It is always advisable to use a de-coupling membrane and flexible adhesive with solid floor finishes to reduce the potential for hairline expansion cracks; large areas will also benefit from expansion joints, especially through doorways. The flooring supplier will be able to offer advice on specific coverings.

Engineered Timber

Engineered hardwood flooring is the natural progression from laminate flooring, offering the beauty of a real wood finish. An engineered board features a top layer of real wood combined with a cross-ply base laminate for stability. This is a more stable product than solid timber as it is cross laminated, like plywood, with a natural timber upper layer, and its moisture content is less critical. It can be laid directly over the underfloor heating as a 'floating floor' or secret nailed to battens or joists. We do not recommend any wood over underfloor heating exceeds 22mm in depth.

Solid Wood

If a rustic look is preferred, solid wood boards will give the right effect. Despite common misconceptions, these floors work very well with underfloor heating. They are gently heated so that the surface temperature usually doesn't exceed 27°C and because the surface of the floor is not dried out in the way it would be using air convecting systems like radiators, underfloor heating can actually prevent timber floors from 'cupping'. Of more importance is the control of the moisture content of the timber such that it is maintained at around 10% at the time of laying. Beech and Maple are more prone to movement due to moisture than other boards. It is standard practice to screw or glue and nail the timber to battens or joists. Alternatively timber can be continuously glued to screed floors using products like Sikabond. We do not recommend any wood over underfloor heating exceeds 22mm in depth.

Carpet

Carpets tend to have a bad rep when it comes to underfloor heating, but as long as the recommendations are followed carpet can work perfectly well. The key point to follow is that the carpet and overlay shouldn't exceed a combined tog rating of 2.4, ideally 1.4 when utilising a heat pump system. Also take into consideration any layers beneath the carpet (Such as a thin ply board).